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Parts one and two of the 44th yearbook of the Association for Student Teaching (AST) contain papers presented at the 1965 annual meeting of AST. Exploring theory as related to professional laboratory experiences, part one includes discussions of applying "inductive-empirical" theory to teacher behavior, using theory as a basis for devising a custom-made approach to student teacher supervision, financing and improving student teaching programs, devising continuous laboratory experiences as a "pretenure" center for developing teachers who can serve the special educational needs of all people, and using interaction analysis training to enable the student to discover consistent generalizations for teaching and learning in his laboratory experiences. Part two includes discussions of the effects and applications of interaction analysis training (which causes changes in teacher behavior and increased awareness of communication patterns), teacher education program curriculums with emphasis on the Teacher Education and Media (TEAM) Projects, ways of profiting from the Team Projects, and the funding problems growing out of the cooperative nature of student teaching programs (with specific funding needs and proposed applications of the Elementary and Secondary Education Act of 1965). Also included is an 81-item annotated bibliography of literature published from 1963 to 1964 on the subject of student teaching. (SM)

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Theoretical Bases
for
Professional Laboratory Experiences
in
Teacher Education

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FORTY-FOURTH YEARBOOK
1965

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THE ASSOCIATION FOR STUDENT TEACHING

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Foreword

The annual meeting of the Association for Student Teaching held in Chicago in February, 1965, elicited such favorable comment from so many that the Board of Directors of AST decided to preserve the papers presented at the meeting so as to enable the entire membership to have access to these ideas. These papers, together with reports of recently conducted research, comprise the content of the Forty-Fourth Yearbook of AST.

The theme of the annual meeting, *Theoretical Bases for Professional Laboratory Experiences in Teacher Education*, was retained as the title of this Yearbook. This theme as well as the program of the 1965 AST annual meeting was the result of the cooperative effort of a committee from the Illinois Association for Student Teaching. The fruits of this collaboration are revealed in the contributions of the individuals whose papers and research appear here.

In designing the annual meeting, the Board of Directors of AST charged the Illinois group with the responsibility of planning and organizing a program that would (1) be different from any previous meeting, (2) be forward-looking in its content, and (3) inspire and motivate to greater achievement those who participated.

Throughout the years, individuals involved in teacher education as well as others outside the field consistently agree on the value and importance of professional laboratory experiences, especially student teaching, in the preparation of teachers. Until recently, however, little effort has been made to identify the specific theories underlying this basic assumption. Furthermore, research studies designed to analyze or amplify these theories are relatively few.

This Yearbook has two basic objectives: (1) the presentation of the theories underlying (a) specific aspects of professional laboratory experiences, (b) the supervision of these experiences, and (c) the financial support needed to insure the highest quality of experiences and (2) the reporting of (a) research related to the identification and implication of these basic theories and (b) implications and priorities developing from the studies.

A difference of opinion and emphasis is evident throughout this Yearbook. This is understandable because each contributor has expressed his views and reported his research from the vantage point of the knowledge he has gleaned in that area of teacher education with which he has been most closely associated. Each contribution has much to stimulate and motivate.

CECILIA J. LAUBY, *Editor*

Part One

Theory Related to Professional Laboratory Experiences in Teacher Education

CHAPTER

I. **Theory Related to Teacher Effectiveness as Applied to Teacher Behavior**
DAVID G. RYANS

II. **Theory Related to the Supervision of Professional Laboratory Experiences**
GLEN G. EYE

III. **Theory Underlying Proposed State and Federal Support to Promote High Quality Student Teaching**
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IV. **Theory Underlying Professional Laboratory Experiences**
HARRY N. RIVLIN

V. **Integrating Theory and Practice in Teacher Education**
NED A. FLANDERS

CHAPTER I

Theory Related to Teacher Effectiveness as Applied to Teacher Behavior

DAVID G. RYANS

Theory is a popular, almost magic word these days. Similarly we have only to mention the word "research" to find our status enhanced. Recognizing the unsophisticated worship of anything that smacks of theory or research, I am still a firm believer in both for education and, specifically, for teacher education.

Personally I believe the probability is very low that useful or effective instructional practices are likely to emerge full-blown and solely from arm chair dreams and deliberations, regardless of the sincerity with which they are undertaken, or from "experience sharing" conference sessions of teachers and teacher educators, or from casual "try this, try that" procedures interjected into our classroom behavior.

Rather, I suspect techniques and materials that will actually improve pupil learning and achieve meaningful educational objectives are more likely to be ones that have proceeded from a systematic sequence of thinking, planning, research, and evaluation.

Just as instructional practices are most likely to be of general applicability and usefulness when they have proceeded through a planned program of research and evaluation, so research (the necessary step preceding the institution of practices) of potential applicability is more likely to be stimulated and engaged in when that research is "theory oriented."

Research, in education as well as in other areas, seldom consists simply of "fact gathering." It usually issues from a set of assumptions and organized thinking based on inferences from earlier research findings. It then proceeds to extrapolate and go beyond the accumulation of verifiable sensory-perceptual data and take into account inferences that may be reasonably drawn about the phenomena under consideration. Such inferences, when systematized and fitted together to form a nomological network, constitute empirically-based theory. Theory and empirical research are by no means antithetical; they are complementary rather than opposed. This has been true throughout the history of science.

It is true that researchers in the behavioral sciences do not agree upon the relative importance of theory for the conduct of research. A few who take an extreme operational position even go so far as to deny the need of any theory whatsoever. Generally speaking, theory-oriented research is highly regarded and often is viewed as the most advanced and sophisticated level of research activity. In discussing the orientation of research I sometimes describe half a dozen levels of research procedure (i.e. seeking answers to currently answerless questions).

These begin with a lowest level which consists of little more than casual observation and data gathering and extend to a highest level which is characterized by selective observation and data gathering. The highest level is directed at the investigation of untested propositions which have been suggested by an organized set of (a) assumptions and (b) propositions that, based on available evidence, appear to have high probability of validity. Research at this level requires the existence of a theoretical framework, employing (a) rigorously defined and unambiguous terms, (b) assumptions accepted as true for the purposes of the theory, and (c) postulates and their corollaries tentatively assumed to be true. From such a theoretical framework one may infer propositions that may be expected to possess high probability of validity if (a) the premises (i.e., assumptions, postulates, and corollaries) of the theory and (b) the reasoning employed are valid.

The validity of propositions suggested by a theory, and in turn, the theoretical structure itself are tested pragmatically against empirical observations. Scientific theory stands or falls as it is confirmed or fails to be confirmed by factual evidence. I have described this elsewhere as "inductive-empirical" theory; you may call it what you wish. It insists upon definitions which are cast in operational terms insofar as possible; it requires certain general assumptions that seem necessary (and appear to be reasonable) and general propositions that may be deduced from the organization and classification of prior observations; and it requires the generation of specific propositions that are consistent with the assumptions and general propositions.

This approach then demands *selective observation* (observation conducted in light of specified propositions and controlled so as to yield information contributing to judgments about the probable validity of the propositions) of the real world and testing of new propositions to estimate their validity and generality.

Descriptions of properties and characteristics of the phenomena under consideration and of their functional relationships may be expected to follow, ultimately making possible the systemization or organization of the descriptive principles into an integrated, coherent pattern (the nomological network, to which I referred), and possibly to extension of the general propositions that were introduced early in the theory-building. The observation phase (i.e., the empirical testing of the theory) and the revision and/or extension of principles and of the theoretical structure as required by further observation are part and parcel of scientific theory building. The goal of theory and also of empirical research is generalization; both theory and research are directed at the description of general principles which seem to hold for the prediction of the phenomena.

A number of purposes are served by theory. Theory is useful to the researcher and the practitioner alike in that it: (a) shows how available information in an area is organized (i.e., how the evidence is classified and interrelated); (b) seeks to predict events and relationships and to bring to light propositions that may describe new relationships; (c) is selective and directive with respect to observation, narrowing the range of events investigated and helping to define the facts that are relevant to a particular area or problem; (d) summarizes facts, going beyond the single observation, abstracting, and generalizing the common elements of classes of related facts. *Good* theory *is* important.

I should comment that the relative "goodness" of a theory, viewed as a testing ground for principles that describe phenomena, is independent of the theory's correctness as an explanation of phenomena. Indeed, there probably are few theories about which we can ever be very certain of their actual correctness. From the standpoint of the advancement of knowledge, whether or not a theory turns out to be a tentatively correct explanation or description of phenomena is not the test of its goodness. If the theory stimulates research and thinking, if it is stated in terms of operational definitions, and if it permits predictions which may be subjected to empirical testing, those are the characteristics that work if it is good and useful theory. This point of view obviously is compatible with that of the person who undertakes research. It emphasizes the fact that the chief function of theory is *not* to describe with *finality* how certain kinds of phenomena (such as teacher behavior) operate, but rather to provide a framework for observation and analysis. The determination of scientific principles are dependent upon theory only as an instrument for guiding research. The results of research serve as the essential basis for the understanding and prediction of phenomena.

SOME APPROACHES TO THEORY OF TEACHER BEHAVIOR

Until recently education has paid relatively little attention to the theory of teacher behavior or to the theory of instruction. A number of us have urged more attention from time to time over the past dozen years. Gage[1] recently renewed the demand for attention to theory in the *Handbook of Research on Teaching* he edited. A chapter on "Paradigms for Research on Teaching" discussed the nature of theoretical models and described several possible models of instruction theory—some adapted from fields other than education (e.g., statistics, psychopathology, administrative behavior, group dynamics, and small group research) and some specifically directed at teaching-learning (e.g., criteria-of-effectiveness paradigms, on the one hand, and "teaching process" paradigms such as those of Mitzel, Smith, Ryans, Stone and Leavitt, and Runkel, on the other).

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[1] N. L. Gage. "Paradigms for Research on Teaching." *Handbook of Research on Teaching*. Chicago: Rand McNally and Company, 1963, 94-141.

B. O. Smith[2] developed and reported on a concept of teaching in 1960 which proposed that a teacher's perception of a pupil's behavior leads to a teacher's diagnosis of the pupil's state of interest, readiness, knowledge, and the like (based on the teacher's inferences from the behavior of the pupil), this in turn leading to actions taken by the teacher in light of the diagnosis; at the same time, a pupil's perception of the teacher's behavior is leading to a diagnosis on the part of the pupil of the teacher's state of interest, his utterances, etc., (as inferred from the teacher's behavior) and the pupil thus reacts to the actions of the teacher. This becomes a cycling process leading ultimately to pupil achievement if the goals of teaching are indeed realized. Dr. Smith and his colleague, M. O. Meux[3] more recently presented a concept of teaching (the one he is describing in his current lectures), which is an extension of his earlier stated viewpoint. Teaching is conceptualized as a system of social action involving an agent, (e.g., a teacher), an end-in-view, and a situation. There are two sets of factors in the situation, one over which the agent has no control (e.g., size of classroom, characteristics of pupils, etc.) and one which the agent can modify with respect to the end-in-view (e.g., assignments, ways of asking questions, etc.). Modifiable conditions, constituting the means by which ends-in-view are reached, consist of two types—one having to do with the subject matter and instructional materials and the other with ways of manipulating the subject matter and materials. The manipulation of procedural features of teaching also has two aspects: first, large scale maneuvers which are referred to as "strategies" (patterns of acts that serve to attain outcomes such as insuring that certain learnings will be acquired by pupils—which I interpret to be similar to what I referred to previously as "teacher behaviors"); and second, smaller teacher behavior components constituting tactical implements of strategies which are referred to as "logical operations"—these being forms which verbal behavior takes as the teacher shapes the subject matter in the course of instruction.

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[2] B. O. Smith. "A Concept of Teaching." *Teachers College Record.* 1960, 61, 229-241.

[3] B. O. Smith and M. O. Meux. *A Study of the Logic of Teaching.* (U.S.O.E., Cooperative Research Project No. 258(7257). Urbana, Illinois: University of Illinois, Bureau of Educational Research (trial edition, 1962).

Another theoretical position has been taken by Turner and Fattu.[4] They espouse a theoretical position in which the teacher is conceptualized primarily as a problem-solver. According to their model: (a) teacher classroom behavior consists of responses which are instrumental in bringing about a goal state in the form of pupil behavior held to be desirable by a particular teacher or group; (b) when the teacher sets his goal of bringing about a particular pupil behavior he generates a problem for himself (i.e., that of getting the pupil to make the desired response and making certain the pupil can produce that response when required); (c) effective teachers are good solvers of teaching problems in a variety of teaching situations and are ones who can successfully transfer their instrumental problem-solving responses to new or variant teaching situations; (d) skill in solving teaching problems depends on ability to acquire instrumental responses and the ability to utilize information to select the appropriate instrumental response in a given situation.

I also should mention that George and Elizabeth Maccia have been focussing their attention on instructional theory in the "Center for the Construction of Theory in Education" at Ohio State University. A number of papers have been issued dealing with the nature of theory and of theoretical models. Some of these papers described theoretical models for education developed by analogy and comparison with principles derived from different areas such as agricultural economics, pharmacology and pharmacogenetics, and general systems theory.

Still another theoretical model is one I first introduced in a very primitive state back in 1955 (and it is still quite primitive, for that matter) which emphasized: the instrumental nature of teacher behavior; the effects on teacher behavior and pupil behavior of teacher-pupil interaction and feedback; the aggregation of simple or more elementary teacher characteristics and their organization into molar teacher behavior patterns; the effect of situational conditions upon teacher behavior at different levels of aggregation; and the systemic nature (i.e., systems character) of teacher behavior. I developed this conceptualization somewhat further in the volume, *Characteristics of Teachers,*[5] in 1960 and, after a series of further *iterations* have added still other concepts to their earlier formulations. It is this latest iteration that I propose to discuss here—although I must admit that some of the points of view I am going to state already have taken a slightly revised form in my own thinking and the next time I write a paper on this topic the evolution of my model and its definitions probably will have continued.

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[4] R. L. Turner and N. A. Fattu. *Skill in Teaching, a Reappraisal of the Concepts and Strategies in Teacher Effectiveness Research.* Bulletin of the School of Education. Bloomington: Indiana University, 1960.

[5] D. G. Ryans. *Characteristics of Teachers.* Washington: American Council on Education, 1960.

As a sort of preview, let me say that the theoretical model I wish to present is what I refer to as an information processing-information forwarding system model. It emphasizes three characteristics of teacher-learning, whether the instruction is accomplished by a live teacher, by a textbook, by programmed lessons, by instructional television, or in any other manner, namely: (a) the *systems nature* of, and interdependence of conditions and operations influencing, teaching-learning; (b) *the information processing nature* of what goes on when a teacher or coordinator of instruction reaches decisions and plans programs or instructional materials or behavior (and what similarly goes on when a pupil receives information from a teacher or instructional instrument and incorporates that information-behavior into his behavioral repertoire); and (c) the *information exchange* involved in all instruction.

In the information processing system model of teacher behavior it is proposed that teacher information processing, which culminates in teacher behavior, is influenced by three major sets of inputs: (1) capabilities and characteristics of the teacher, or *internal inputs* (e.g., physical-physiological characteristics, general capabilities, characteristic abilities-capacities, characteristic behaving styles, characteristic affective sets, and retrievable information-behavior); (2) conditions external to the teacher, *external inputs* (e.g., objectives-goals of learning in a given situation, information-behavior content to be learned by pupil, learning media available, pupil behavior, administrative policies, counseling to which pupils have been exposed, and culture of which the pupil is a part); and (3) positive and negative feedback inputs.

Teacher information processing itself is held to consist of a series of logical phases tentatively classified as (1) *input processing,* which involves the sensing, filtering, analyzing and classifying, temporary storing, etc., of inputs; (2) *processing of information preliminary to decision-making and channeling,* involving goal-defining and task-analyzing, retrieving of information-behavior appropriate to the teaching goal, reintegration of information, the evaluation of outcomes of possible alternative behaviors in conveying the information to the pupil, etc.; (3) *decision-making* (i.e., the making of decisions on the part of the teacher with respect to the content of information to be conveyed to the pupil; the selection of mode of teacher behavior or channeling to be employed; the control of external conditions; etc.); (4) the *processing of information for use* (i.e., the programming or planning of the actual behavior to be carried out); and (5) *execution of the selected teacher behavior.* Feedback, both positive and negative and both from the teacher's own behavior and from the pupil's behavior in a particular teaching situation are held to influence teacher information processing and teacher behavior in future similar situations, the feedback providing additional inputs which may aid in making the instructional behavior more appropriate the next time it is engaged in.

The information processing system theory maintains that in activities involved in the formal teaching-learning situation, selected information in the form of facts, concepts, and rules and relating to cognitive, affective, and psychomotor behavior is assembled, organized, and programmed by the teacher for exchange via some medium (e.g., the teacher, a textbook, a TV display, a programmed lesson, etc.) to a receiver-learner (i.e., the pupil) in a manner which is expected to enhance both the accurate receipt of the information-behavior intended to be conveyed and, by involving active participation on the part of the receiver-learner, incorporation of that information into the learner's hierarchical behavior repertoire. Information exchange in this context refers to the forwarding of "meaningful" information that can be "used" by the receiver-learner. It involves the transmittal not merely of signals comprising a message in a syntactic sense but also of references to objects and events to which the employed symbols refer. Its meaningfulness and usefulness are dependent upon (1) common past experiences of the sender and receiver (i.e., teacher or teaching instrument and pupil), (2) on behavioral sets and states of readiness of the receiver-pupil, and (3) on current operating conditions and circumstances.

This theoretical position I have presented has been influenced largely by four conditions: (1) thinking preceding the conduct of a rather large research project I was privileged to conduct (the Teacher Characteristics Study), particularly a rough theoretical framework which I first described publicly at the 1955 annual meeting of the American Educational Research Association, the research findings that grew from the Teacher Characteristics Study, also relevant research on teacher behavior reported by other investigators, and early experience with data accumulated in connection with the National Teacher Examinations; (2) my introduction to certain concepts of "general system theory" as described by the group of behavioral scientists who first developed their thinking at the University of Chicago and took along with them as they moved to the University of Michigan; (3) my impression of the social nature of teaching-learning and the interaction of teacher and pupil, particularly as this was formulated by Sears in describing the dyadic unit as a useful construct for a theoretical framework of personality and social behavior; and (4) a growing interest in concepts associated with information theory and communication theory.

I do not have sufficient time, and you probably would be bored if I did, to describe various terms involved in my point of view and their definitions—I refer to such terms as "system," "open systems" as opposed to "closed systems," the very complex term of "information," "in- information with maximum fidelity and minimum influence of interfer- Perhaps I should direct your attention to the connotations I employ with respect to at least two terms, "information control" and "information processing" as these apply to my model of teacher behavior.

When information exchange between systems, as between a "teacher system" and a "pupil system," is planned to achieve some objective we imply the operation of information control; the information flow is controlled and the output of the information-forwarding system is programmed in such a manner that there is expectancy that the intended information will be sensed, identified, and incorporated in the repertoire of the receiving system. When we speak of the programming of information and of information-conveying behavior we imply (a) the reaching of certain decisions or choices among alternative courses of action for information selection and forwarding and (b) the organization of behavior for execution in accord with decisions reached. *Control of information* has the same meaning as the use of control in experimentation and research; we try to control conditions in order to accomplish our objective (in this case the effective transmission of information). This means (a) selecting information content with regard to its relevance, timeliness, accuracy, and completeness, from the standpoint of the intended objective and meaning of the conveyor (teacher), (b) selecting content and mode of transmission with regard to its adaptation to the receiver-learner's state of readiness, and (c) communicating information with maximum fidelity and minimum influence of interfering or contaminating conditions.

Permit me to introduce one more term, "information processing." In a generic sense *information processing* refers to the handling of information by a system—how it senses information, filters and selects it, analyzes it, synthesizes it, recombines it for a given purpose, reaches decisions about what to do with information inputs, and prepares the information for transmission to another system. The term information processing has been associated closely with computers, referring to the programming of the computer to collect, generate, receive, manipulate, store, transmit, and display information. But in this paper we are talking about *human information processing*—how information may be processed by the human system. When the teacher or pupil is described as an information processing system, information processing means the receipt, storage, retrieval, selection, manipulation, preparation for transmission, control, and forwarding of some meaningful information or message in a manner which seems most likely to lead to understanding of the message by its receiver and to incorporation of the information into the receiver's hierarchical association map or repertoire.

One way of conceptualizing teacher information processing is to consider the teacher's activities as a five-phase sequence consisting of:

1. Sensing, identifying, and classifying of information inputs;
2. Evaluating potential courses of action in light of the pupil behavior domain involved, the content of the information to be communicated, and the information form and channel consistent with the intended pupil use of the information;

3. Decision making, involving the selecting of appropriate information content, appropriate transmission channels or media, and appropriate means of information control;
4. Programming or the logical-psychological ordering and arranging of the intended information output;
5. Transmission of appropriate information via appropriate channels (i.e., teacher behavior).

The teacher's communication or forwarding of information (i.e., information exchange to a pupil) may take any one of a number of forms. It may consist of the communication of a message in the form of verbal symbols as in spoken or written language. It may consist of a set of quantitative symbols. It may be in the form of physical gestures, facial expressions, or personal-social behaving styles. It may take the form of a demonstration (either in the limited sense that a chemistry experiment is demonstrated by a teacher, or from a broader point of view that the individual teacher serves as a model whose behavior may be imitated by his pupils or students). Of course, it may involve the use of learning aids (i.e., media) of various sorts.

Similarly, the information transmitted may be related to any of several kinds of content associated with the several so-called behavioral domains. It may have to do with cognitive-type materials (e.g., knowledge, concepts, etc.); with affective content (e. g., attitudes-values, temperamental-emotional characteristics, etc.); or with psychomotor skills.

The purposes for which information is processed and communicated also may vary in an instructional theory cast in terms of information systems. The information may serve the purpose of simply reporting, as in the case of the news that is printed in the newspaper or broadcast over radio or television. The information may perform a direction-giving, or a command-and-control function. It may be intended to describe and clarify some policy. It may be employed for the purpose of coordinating action that requires mutual exchange of information. It may be employed by the instructor simply to define, explain, or clarify issues or problems. It may have the purpose of influencing attitudes and value systems. Or it may be used to summarize, or to classify, facts that may be recombined in different forms to promote new discoveries.

In the teaching-learning process the immediate purpose for which information is processed is, of course, to facilitate the pupils' acquisition of knowledge, understanding, skills, procedures, attitudes, and the like. It is worth repeating, however, that simply because some particular item of information has been transmitted and is received by the pupil does not, in itself, imply acquisition of knowledge or skill. Such acquisition depends upon the active response of the learner and on the existing conditions affecting the learner as an information-processing system when the information is received. Furthermore, the same information content, transmitted in the same way, may have different meaning for different pupils (i.e., individual differences among the receivers of information must be recognized).

SOME POSTULATES AND PROPOSITIONS RELATING TO THE CONCEPTUALIZATION OF TEACHER BEHAVIOR

I wish it were possible to go into the basic postulates of the theory I am proposing in greater detail. Certainly the assumptions, postulates, and definitions with which one begins, determine to a large extent the nature of the theory which follows from them. For the present, however, I am merely going to state my first six postulates without comment. These are (1) teacher behavior is characterized by lawfulness and order; (2) empirical study and inductive inference provide the valid approach to understanding of teacher behavior; (3) teacher behavior is observable; (4) individual differences in observable teacher behavior exist; (5) teacher behavior is basically social in nature; and (6) the end product of teacher behavior is some pupil behavior, or set of pupil behaviors (i.e., teacher behavior consists of instrumental responses or acts on the part of the teacher the objective of which is to influence the acquisition of pupil behavior of a specified kind and/or degree).

The seventh of the postulates I would like to describe in slightly greater detail. I shall put it this way. Teacher behavior (and pupil behavior, both of which may be subsumed under a theory of instruction,) can be described in terms of information processing or information systems. More specifically,

A. Teacher behavior is instigated and determined by internal and external inputs to the teacher system (e.g., (1) inputs and information-processing capabilities internal to the teacher; physical-physiological characteristics, general capabilities, characteristic abilities-capacities, characteristic behaving styles, characteristic affective sets, retrievable information stored in memory; (2) inputs external to teacher: objectives-goal of learning, pupil requirements, behavior/ content to be learned by pupils, externally available information re behavior/ content to be learned by pupil, learning aids or media available, pupil behavior in the learning situation, administrative policies, school law, etc., counseling-guidance to which pupil has been subjected, culture of which pupil is part, and information and experience pupil brings to the learning situation.

B. Input processing (involving: sensing, decoding or perceiving; filtering and sifting; analyzing, transforming, and classifying; storing of potentially relevant information for ready utilization) is necessary for determination of the relevancy of available information for use in a given instructional situation.

C. Relevant information available to the teacher is processed with respect to alternative adaptations and courses of action as a preliminary to decision-making about teacher behavior to be employed in a situation (e.g., definition of goal in the given situation, analysis of information transmission task in situation; summary, synthesis, and recombination of relevant information; determination of alternative channels—teacher behaviors or combinations of teacher behaviors with the use of other learning aids and media; evaluation and prediction of probable outcomes of alternative courses of action; adoption of rules or bases for decision-making).

D. Decision is reached with respect to instructional procedure/information forwarding in the given situation (e.g., decision-making with respect to content to be transmitted to pupil including necessary adaptations and transformations; decision-making with regard to channels—mode of teacher behavior, media to be employed, etc.; decision-making with regard to preparation i.e., prior information transmission) of pupil for receipt of the primary information; decision-making with regard to amount of information to be transmitted in the given situation; decision-making about the sequencing of information (i.e., preceding and following messages); decision-making with regard to evaluation (i.e., receipt of message and action upon it by pupil); decision-making about reinforcement of pupil behavior in response to message; decision-making with respect to control of noise (i.e., interfering inputs to pupil).

E. Information output re teacher (i.e., teacher behavior) is programmed, preparatory to information exchange to pupil system (e.g., information content is selected, encoded—adapted and transformed as required by situation—and readied for transmission; controls are designed; etc.).

F. Teacher behavior, the output of the teacher system, is evoked which forwards information to the receiver/destination (i.e., the pupil).

G. Information forwarded by the teacher and/or learning media reaches the receiver/destination (i.e., the pupil).

H. Message is acted upon by pupil (and if successfully programmed, transmitted and received, is processed by the pupil system and incorporated into pupil's association hierarchy/storage for future retrieval, and/or produces an immediately observable response or pupil output).

I. Feedback from the teacher behavior (i.e., teacher output) and the pupil behavior (i.e., pupil output) provides additional inputs permitting the consequences of the teacher behavior to modify future behavior in similar classes of teaching situations.

I also would like to call your attention to two general propositions. These general propositions, or really families of propositions, deducible from the stated definition of teacher behavior and the postulates are:

Proposition I: Outputs of the teacher information system (i.e., teacher behavior, or teaching-related behaviors) comprise broad classes and patterns of interacting instrumental responses which, in turn, fall into the general categories of *motivating-reinforcing, presenting-explaining-demonstrating, organizing-planning-managing, evaluating,* and *counseling-advising behaviors,* these having as their goal the forwarding of information which will be incorporated into the pupil's hierarchy of skills, knowledge, understandings, attitudes, and other kinds of information behavior.

Proposition II: Outputs of the teacher information system (i.e., teacher behaviors, or teaching-related behaviors) are functions of, and therefore vary with, the interaction of inputs in the form of (a) identifiable teacher characteristics and conditions, and (b) general and specific conditions of the teaching situation, including characteristics of the pupils taught, the administrative context, the cultural milieu, the learning content context, pupil behavior goals that have been set, feedback from the results of previous teacher behavior in similar teaching situations, and perhaps other conditions.

Each of these propositions has a number of ramifications or corollaries which need be considered in greater detail.

One important point that has been made is that teacher behavior consists of instrumental behaviors or responses. These instrumental behaviors of teachers are directed at, and are intended to lead to, the attainment of educational objectives which can be defined only in terms of specified pupil behaviors (knowledge, understandings, skills, attitudes, etc.). Teacher behaviors seldom can be considered ends in themselves; instead, they are means-to-ends behaviors that are intended to aid in achieving an end product consisting of specified behaviors and capabilities on the part of the teacher's pupils.

If time and space permitted I would like to discuss what I mean by "motivating" teacher behavior and "reinforcing" teacher behavior, by "presenting-explaining-demonstrating" teacher behavior, by "organizing-planning-managing" teacher behavior, by "evaluating" teacher behavior, and by "counseling-advising" teacher behavior. However, I think each of you has a general idea of what I mean by these terms; my principal point is that in my theoretical framework I think of these as being five of the larger, or broader, patterns of behavior or roles that describe what teachers do in the classroom and therefore that have implications for the student teacher and for teacher education in all of its ramifications.

RELATIONS OF TEACHER BEHAVIOR THEORY TO TEACHER EFFECTIVENESS

In the context of my own pet theoretical position, teaching is "good" or "effective" teaching to the extent that (through appropriate motivation and reinforcement, presentation, explanation, and demonstration of agreed-upon curricular content, organization, planning, coordinating and managing, evaluation, and advising and guiding) it results in the development on the part of the teacher's pupils of skills, understandings, work habits, attitudes and value concepts, and personal and social adjustment acceptable to the culture or community in which the teaching is accomplished—and that this development of pupil's skills, understandings, work habits, attitudes and values, and acceptable personal-social adjustment is accomplished in optimum time, with optimum retention and transfer, and with no harmful personal adaptations. Now this definition admittedly is still much too abstract to tell us just what education teachers might be taught to accomplish. It retains the inescapable relativity that is demanded when educational objectives and programs vary from community to community. About all I have done is to standardize the definition of teacher effectiveness very slightly by suggesting (1) that teaching is good when the teacher is a good motivator, reinforcer, presenter, explainer, organizer, evaluator, and counselor, (2) that the expected outcomes of good teaching are the acquisitions by the pupils of the intended skills, understandings, attitudes, and the like, and (3) that when teaching is good such acquisition of learning is accomplished with minimum waste of time and effort, without acquisition of harmful behavioral concomitants on the part of the pupils, and in ways that enhance retention of learning and its transfer to other situations.

My descriptions set only very general limits and will not be applicable in an operational sense to a particular school system or a particular teacher. Each school system must (although I am afraid relatively few schools recognize this, and probably still fewer do much about it) evolve its own operational definition of "good" teaching. This means careful thought to the school system's own objectives in light of local community values as well as values shared by larger communities such as state, nation, or contemporary world. It also means careful attention to the several aspects of teacher behavior we noted (the teacher as a motivator, guide, etc.) and the "spelling out" of details of teacher behavior as they relate to the particular grade level or subject matter involved and the particular educational objectives that are being taught for.

RELATIONS OF TEACHER BEHAVIOR RESEARCH TO TEACHER EFFECTIVENESS

I have often been troubled by the fact that most of us, and I include myself, may have obscured understanding of teacher behavior by being obsessed with the need to assess "teacher effectiveness" in some direct manner without previously proceeding through all of the steps of what I sometimes call the "prediction research paradigm." Certainly I would like to be able to identify teacher effectiveness and understand its relation to observable teacher behaviors. But, defining teacher effectiveness is a relative matter depending to a large extent upon the individual doing the defining. Furthermore, efforts to assess teacher effectiveness often are undertaken without any real knowledge of the repertoire of teacher behaviors that may be taken into account, or of their relationships to operational definitions of teacher effectiveness. Let me recall with you the distinction between "teacher behavior description" and "teacher behavior evaluation."

Teacher behavior description is concerned with the identification, inventorying, and determination of interrelationships among teacher characteristics and behaviors. *Teacher behavior evaluation* involves judgments of the quality of teacher behaviors—judgments which of necessity must be made in light of agreed-upon educational objectives, expectancies of individuals or groups, and other evaluative criteria approved by the school and community in which a particular teacher is teaching. Value considerations are important in our thinking. We do need to raise questions about good and poor teaching and to give careful attention to what "good" and "poor" means in the context of particular value systems; and to identify teachers whose performances may be characterized as superior or inferior with respect to the agreed-upon context. But the properties that comprise teacher behavior must be identified and operationally described, and the value system to be employed must be similarly defined before one attempts the value judgments and assessments of teacher behavior that we refer to as teacher evaluation.

In commenting upon teacher effectiveness research, the writer frequently refers to what he calls the "evaluation research paradigm." The steps involved in the paradigm are not particularly unique; consciously or unconsciously every researcher who attempts sophisticated prediction takes them into account. Applied to teacher competency evaluation and prediction, they are:

A. Identification of the properties of teacher behavior—the description of teacher behavior.

B. Selection of a value system, or "criterion," framework—this being subjective and a matter of the value system or systems different individuals or groups may agree upon, or possess in common;

C. Identification of the particular kinds of situations in which the agreed-upon "valued" behavior is to be assessed and predicted;

D. Operational description of the agreed-upon valued behavior (or criterion behavior) that the researcher or practitioner wishes to assess or predict in teachers;

E. Conduct of research on relationships between selected, operationally defined properties of teacher behavior (as noted in step A and selected operationally defined "valued behaviors" (as noted in step B) in the selected situations (noted in step C).

These are necessary steps before we can make reliable and useful assessments of teacher effectiveness either for research purposes or in practice.

Thus, teacher evaluation, or the judgment of teacher effectiveness, can be properly and successfully accomplished only when it is based upon reliable knowledge of the essential behaviors involved in teaching and the basic characteristics of the teacher. For this reason, it is appropriate that much of the research being conducted today is concerned with the identification of the behaviors of teachers and with their description rather than proceeding in absence of such a base of information, to value considerations. Before teacher effectiveness can be studied properly, a great deal of attention must be given to developing its operational definitions —definitions that spell out the particular, highly specific, behaviors that are involved in "good" teaching from the standpoint of a particular college or school system, teacher group, community, or teacher education faculty. Systematic attention must be given (a) to the designation of expected teacher behaviors and educational goals acceptable to the particular group the teaching will serve and (b) to the characteristics of the teacher that have been identified and for which reliable methods of observation and assessment exist.

A number of teacher behavior patterns have been identified—in terms of our theory. These are "outputs" of teacher information processing and teacher decision making in a particular instructional situation. The behavior patterns cover a wide range. However, certain behaving styles of teachers appear to have been observed with considerable regularity by different researchers, studying different samples of teachers, in different locations, under differing conditions of observation. For example, a "friendly, warm, understanding, sensitive, sincere, empathetic, rapport-maintaining" sort of behaving style has been reported by a number of investigators. Similarly, a "responsible, systematic, businesslike, dependable, well-prepared, efficient methods of presentation, student achievement oriented, orderly, organized" pattern of behavior or style has been reported very frequently. And a pattern of behavior involving "stimulating, imaginative, achievement-motivating, active, resourceful, dynamic" teacher characteristics also recurs in the reports of various researchers. A "personally acceptable, attractive, good-appearing, verbally expressive, communicative, professionally-impressing" behaving style has also been identified with considerable regularity.

Another type of pattern of behavior styles that has been identified and studied by a number of researchers has to do with a "direct, teacher centered, dominating, authoritarian" behaving style, on the one hand, and an "indirect, integrated, permissive, child-centered" style, on the other. I have mentioned only a few of the teacher behavior patterns that have been reported in the literature.

In addition to teacher "behaving styles" considerable progress has been made in researching the "role expectations" with respect to the teacher—the teacher as perceived by self and by others. Teacher "affective sets" which have to do with attitudes towards pupils and emotional-stability adjustment have been studied; teacher abilities-capacities in the verbal-semantic, quantitative-symbolic, and logical domains have received considerable attention. Teacher knowledge and understanding or teacher retrievable information has been measured by many investigators with so-called teacher examinations. The teacher information processing functions themselves have been given some attention.

I do not do justice to the many studies that have been made of teacher behaviors during the past few years.

Some of the teacher behaviors and capabilities (that fit into the teacher information processing model I have talked about—in the form of inputs) have been given attention in relation to hypothesized teacher effectiveness. Time and space demand that I delete some planned discussion of generalizations relating to characteristic behaviors that may be related to teacher effectiveness. However, I shall move on to some implications of one theory of teacher behavior for teacher education and student teaching.

Measured cognitive or intellectual abilities achievement in college courses, knowledge of subject matter to be taught, general cultural knowledge, knowledge of professional information, student teaching marks, estimated emotional adjustment, attitudes favorable to students, generosity and tolerance in appraisals of the behavior and motives of other persons, strong interest in reading and in literary matters, interest in music and painting, participation in social and community affairs, early experiences in caring for children and teaching (such as reading to children, taking a class for the teacher, etc.), history of teaching in the family, size of school and size of community in which teaching is accomplished, cultural level of community, and participation by the teacher in avocational activities, all appear to be characteristics of the teacher which are likely to be positively correlated or associated with teacher effectiveness.

Age of the teacher and amount of teaching experience seem to show an over-all negative relationship with most criteria of teacher effectiveness, although there is evidence of curvilinearity, increase in effectiveness being positively correlated with experience during the early years of teaching careers. Sex differences in teacher effectiveness do not appear to be pronounced among elementary teachers; at the secondary level there is some evidence that women as a group may be more effective than men as a group on specified criterion dimensions.

For teachers of all levels considered together, there seems to be little difference in specified dimensions of teacher behavior between single and married teachers. Within the elementary school the evidence somewhat favors married teachers; at the secondary level unmarried teachers as a group appear to be superior with respect to certain criterion measures such as those which relate to sytematic, responsible, teacher classroom behavior.

Certain of the characteristics that have been discussed, then, do seem to be associated with specified dimensions of teacher effectiveness. The degree of obtained relationships frequently has not been high, and it is important to recall that the relationships and differences which have been noted by reports in the literature are in terms of averages for groups of teachers. The usefulness of research findings pertaining to the prediction of teacher effectiveness will be greatest, therefore, when the results are considered in an actuarial context, rather than in attempting highly accurate prediction for given individuals.

It seems safe to say that, largely because of the relative nature of teacher effectiveness, teacher education would do well to focus attention on teacher behavior per se and to consider particularly: (a) the internal inputs contributing to teacher information processing and the cultivation of those teacher characteristics that do indeed seem modifiable and (b) the logical process we have called teacher information processing and how teachers can best be prepared to carry out such functions as they participate in the communication of meaningful facts, concepts, and rules to pupils and seek to facilitate their incorporation into the pupil's information hierarchy.

SOME IMPLICATIONS OF ONE MODEL OF TEACHER BEHAVIOR FOR TEACHER EDUCATION

It is believed that the information system approach to the understanding of teacher behavior and to the preparation of teachers has the following advantages:

1. It directs attention to the importance of the communication process, so teacher education courses may focus upon the important problem of transmitting cognitive, affective, and psychomotor information in ways that will maximize its understanding and facilitate its learning by students.
2. It directs attention to the "systemic" nature of instruction and of the education process as a whole; it emphasizes the importance of interactions among conditions influencing teacher-learning and

the need for optimizing the organization of teaching so as to achieve better the objectives of instruction.

3. It directs attention to the role of the teacher as a coordinator of teaching-learning. The teacher is viewed as the organizer and planner of the instructional process, employing whatever techniques and media that may contribute best to achievement of the purposes of instruction in a particular situation.
4. It directs attention to the need for the teacher to be acquainted with the technology of education (i.e., with the principles of individual learning, with programmed instruction or auto-instruction, with educational data processing, etc.).
5. It directs attention to the teacher as a decision-maker. Not only must the teacher be cognizant of the various inputs which influence his own behavior, but he must recognize the need of considering alternate procedures and courses of action and making decisions regarding content as well as procedure in an effort to maximize the acquisition of information, or learning, by the pupil.
6. It directs attention to the importance of "feedback" to the teacher; feedback through pupil response and reactions, through tests and evaluative devices, or by other means which will inform the teacher of the effectiveness of procedures employed and permit their modification as required.
7. It directs attention to the interplay of instruction with administration, with counseling, and with other instructional-support functions in the over-all school or college system.
8. It directs attention to the several major channels of teacher behavior (i.e., the *motivating-reinforcing* teacher behavior, *presenting-explaining-demonstrating* teacher behavior; *planning-organizing* teacher behavior; *evaluating* teacher behavior; and *counseling-guiding* teacher behavior).
9. It directs attention to the need for knowledge about learning aids and media and how to use them, and to the media and procedures best suited to each of the major classes of teacher behavior noted under 8 above.
10. It directs attention to the importance of the behaving styles of teachers (i.e., warm-understanding teacher behavior, responsible-systematic teacher behavior, stimulating-imaginative teacher behavior, etc.) in facilitating information transmittal and subsequent pupil learning.
11. It directs attention to the search for the most appropriate ways of transmitting various kinds of information with which the school is concerned (i.e., the appropriateness of different system tech-

niques and learning aids for transmitting particular kinds of information, such as knowledge and understanding, psychomotor skills, attitudes, etc.).

12. It directs attention to information transmission that is organized to create an appropriate "set" or readiness for learning on the part of the pupil.

The above list is a partial one, but it will serve to illustrate the kinds of advantages that may accrue from turning attention to the information system nature of teacher behavior.

To the extent that we can introduce such concepts into our teacher education program and can, in our practice or in our student teaching, incorporate into teacher behavior the practices suggested by these "implication" statements just made, to this extent I believe we can improve teaching. That, of course, provides the necessary ultimate test for the theory here presented.

CHAPTER II

Theory Related to the Supervision of Professional Laboratory Experiences

GLEN G. EYE

The quesion may be raised at once as to whether supervision, basically, is different for professional laboratory experiences than it is for supervision of the elementary grades, science, physical education or laboratory technicians in a hospital. The extent to which there may be an overlap in the supervisory behaviors and responsibilities for professional laboratory experiences, the elementary school, the high school or other situations may be an indication that there is a commonality in theory. If theory is related to the performances as a supervisor, then, it is certain that the theory underlying each specific behavior selection must have much in common.

Problems of adaptability for both supervisory practices and theoretical undergirdings or characteristics of the supervisory act are raised. The first question is "How adaptive is the definition of supervision?" This discussion will be keyed closely to the diagram which carries the title *A Design for a Program of Supervision of Instruction.*[1] This design is in part a directive to a theory of supervision and in part a directive to the selection of appropriate supervisory behaviors. The definition of supervision here is oriented to the elementary and secondary school, as is indicated in the "phase of school administration." One may omit this particular reference to school administration and he reads then that supervision "deals primarily with the achievement of the appropriate selected instructional expectations of educational service."

There is an inviting flexibility with respect to the application of this definition in that it can give direction to a supervisory program. The fact that you are dealing in supervision with achievements infers that this achievement is directed toward improvement. This must be a common purpose whether you are an administrator, a supervisor, or a teacher at any level of an educational program. The definition indicates that you are concerned with appropriate and selected instructional expectations. These may differ from one grade level or from one unit of our educational system to another. You have a problem in the elementary grades

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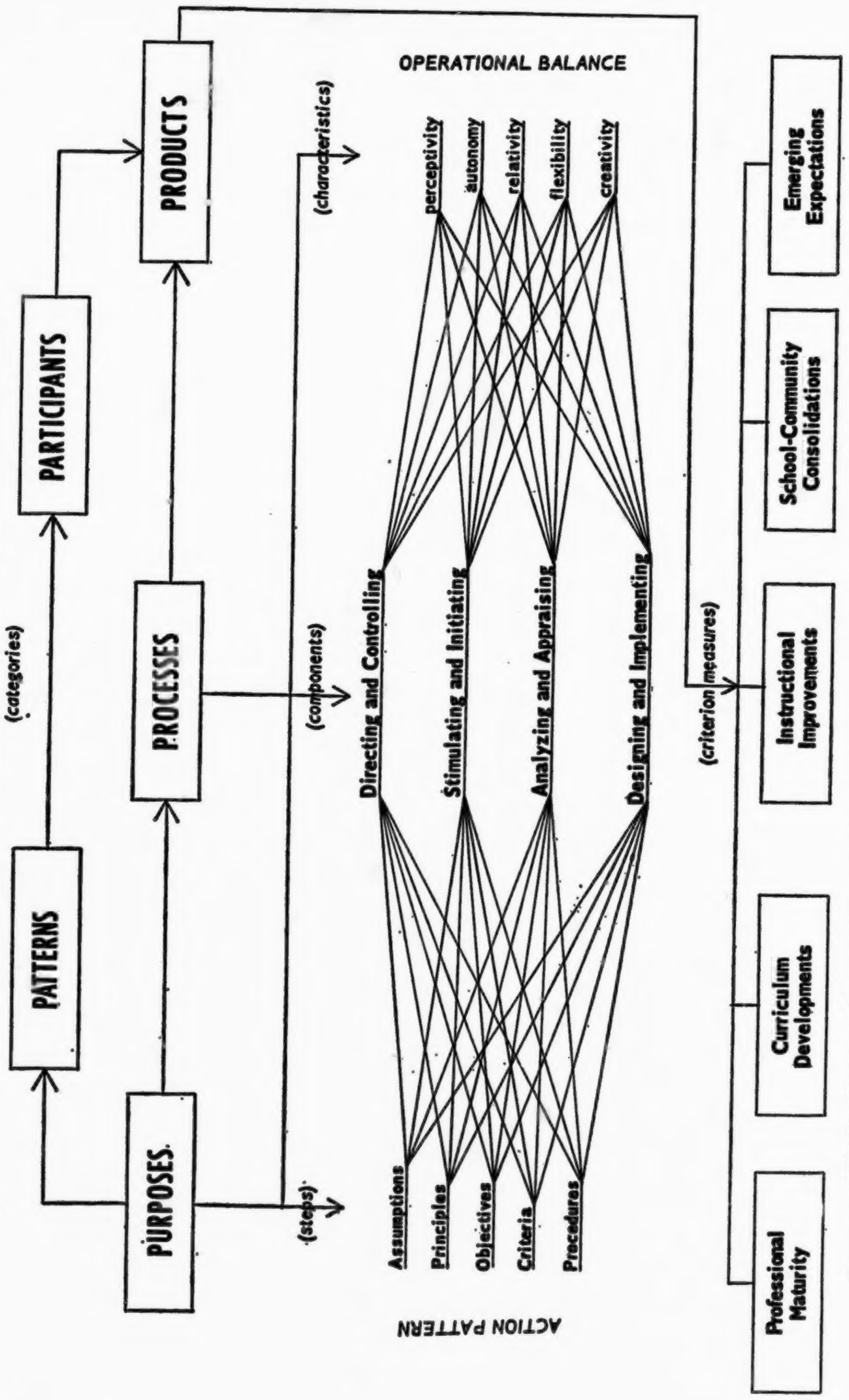
[1] Glen G. Eye & Lanore A. Netzer, *The Supervision of Instruction: A Phase of Administration,* Harper & Row, New York, 1965.

A DESIGN FOR A PROGRAM OF SUPERVISION OF INSTRUCTION

Supervision is that phase of school administration which deals primarily with the achievement of the appropriate selected instructional expectations of educational service.


PURPOSES
PATTERNS
(categories)
PARTICIPANTS
PROCESSES
PRODUCTS
(steps)
(components)
(characteristics)
OPERATIONAL BALANCE
Assumptions
Principles
Objectives
Criteria
Procedures
Directing and Controlling
Stimulating and Initiating
Analyzing and Appraising
Designing and Implementing
perceptivity
autonomy
relativity
flexibility
creativity
ACTION PATTERN
(criterion measures)
Professional Maturity
Curriculum Developments
Instructional Improvements
School-Community Consolidations
Emerging Expectations

From: - SUPERVISION OF INSTRUCTION: A Phase of Administration Published by Harper & Row, 1965

GLEN G. EYE AND LANORE A. NETZER, DEPARTMENT OF EDUCATIONAL ADMINISTRATION UNIVERSITY OF WISCONSIN of selecting instructional expectations that are appropriate to the maturity of the pupils, to their intellectual capacity, and to the tolerance of a supporting public. The same sort of differences may characterize the supervision of professional laboratory experiences, even though you are dealing here with more mature people. On the other hand, you are dealing with persons and situations that exhibit a degree of sensitivity even more demanding than the most assiduous scrutinizers of educational service in the local community. Yet the definition adapts to all these various types and levels of supervisory activity.

The next question is whether there may be a problem of adaptation of a theory to all types of supervision and, particularly to the supervision of the professional laboratory experiences. The definition of theory as presented by Harper's *American College Dictionary* 1956, p. 1256 is (1) "a coherent group of general propositions used as principles of explanation for a class of phenomena" and (2) "a proposed explanation whose status is still conjectural, in contrast to well-established propositions that are regarded as reporting matters of actual fact." It might be well to review your own acceptance of this or some other definition of theory. Many put it into simpler terms by saying that a theory is the conglomeration or collection of assumptions, principles, objectives, notions, hunches, known facts, and the particular nature of the person organizing these factors into a coordinated whole that may give directions to various possibilities of behaviors.

It is distressing to hear practitioners make the statement so frequently that a theory is good only to the extent that "it tells me what to do." Theory as theory was never intended to give one a basic pattern of behaving. Rather it gives you a basis for determining which new behaviors you may want to espouse and, certainly, it gives you a basis for testing those behaviors which characterize you. But even more importantly, a theory should provide a number of propositions or hypotheses that gives each one an opportunity to test continuously the various ways of behaving as a supervisor and, thereby, selecting the improved ways of supervising.

It is distressing, also, to observe the pseudo-conflict between theory and practice. One may wonder even about the title assigned to this presentation—*Theory Related to Supervision.* One might say that if theory presumes any involvements with the interrelationships of people, it probably cannot avoid being related to supervision. As stated earlier, this presentation is keyed closely to the design previously called to your attention. The authors of this design are committed to the theory implicit in the design.

There is theory in the design. There is an opportunity to select various *purposes,* various *patterns,* numerous *processes,* and many *products* for which you want to accept responsibility. At the same time you will find in the design a certain manner for proceeding in the refinement of your own supervisory program, as well as some characteristics that may give you a cross-check on the things that you do and, thereby, make certain that you have not become a *one-criterion* or a *one-process* supervisor. As indicated under PURPOSES in the chart, there are *steps* in arriving at the supervisory program. These steps move from purposes, to patterns, to participants. At the same time purposes move to processes, through both patterns and participants and all lead to an emphasis on the products or an outcome of the effort invested. It means that one, in taking the first step in devising his supervisory program via a theoretical approach, will take a look at those assumptions which he holds and which probably will make some difference in his selection of supervisory behaviors.

Assumptions such as these may be used. First, "The major function of supervision is that of influencing situations, persons, and relationships for the purpose of stimulating change that may be evaluated as improvement." This is not an assumption that we ask you to accept. It is an assumption held by the authors of the design. Think now of your own assumptions. If in your practices in supervision you have attempted to bring about all of the changes in the student teacher by exercising direct influence on that student you have not accepted the part of our assumption which indicates that supervision must be responsible for influencing *situations* and *relationships* as well as *persons*. You may say that you cannot bring your influence to bear upon a teacher in a cooperating school, therefore, you must force the student teacher to achieve something that he cannot observe and which he may be opposed in doing in the laboratory situation. Your assumption would of necessity demand that the major function of supervision is to influence the student teacher in a particular direction regardless of the laboratory situation and the attendant relationships.

Another assumption which we might offer to you is, "Planning is the most constant factor in improvement of program accomplishments." You may not place so much emphasis upon the factor of planning. If you do, however, you probably have your own time *carefully planned*, and your anticipated contacts with the student teacher *fully planned*. "Well planned" should mean that you have the plan in written form so that it might be reviewed by another. Merely to say, "I have a plan" which becomes evident only by its outcome is probably to have no plan at all.

We offer a third assumption as an indication of the way that we would be thinking as we selected supervisory behaviors to characterize our own work. It is "Many personal and situational factors influence behavioral changes." One may choose to state this assumption in a different form. In practice, we see people who apparently believe that the personal factors are more important than the situational factors in influencing behavioral change. Others, perhaps who have been schooled in a different basic science, may believe that a control over the situational factors will automatically or dominately influence individual behavioral changes. Certainly, a supervisor of professional laboratory experiences has not discharged his obligation to the situational factors by making some of the statements about cooperating teachers, principals, and schools that are often heard in professional meetings. It does not improve the supervision of professional laboratory experiences by building up an assurance in the student teacher's mind that he is going into an impossible and degrading situation so far as educational progress is concerned and that he must learn by what others ought not to do rather than by what they ought to do. If you assume that all cooperating schools are staffed by dullards and hamstrung by expedience-bound administrators you are on the way to a different kind of a supervisory program than the one anticipated in the assumptions stated here and in the theoretically based design presented to you.

If assumptions are stated, preferably carefully stated and even more preferably stated in terms of one's basic beliefs, then, one will at once have many cues to the development of a statement of working principles. I emphasize again that the writing of one's views is wonderful therapy for clarification and even for possession. It is so easy to allude to a theory which in turn is composed of assumptions, notions, hunches, laws, principles, etc., but never really to possess it at all. The act of putting one's thoughts into written form not only clarifies that which you do believe but also eliminates those things which have never become sufficiently real to your mind that they would constitute a controller of your behaviors.

Principles are more directive than assumptions, at least more obviously directive if stated. Assumptions may represent some basic hunches and feelings whereas principles must represent a persistent relationhip of identified factors. Principles should give direction to action in an observable form because they, in turn, lead to the selection of specific objectives which control behaviors. A principle may be defined as "a persisting relationship between two or more phenomena which gives direction to action." Many people will insist that the principle must be as steadfast as a law. I doubt that the semanticists require this. A principle is not something that will never change. It is not necessarily the fact that is eternal. It is a statement of interrelating phenomena that may be observed, that may be studied, and that can give direction to behavioral choices. Go back now to the first assumption stated above which, if you recall, dealt with the influencing of situations, persons and relationship as a means of stimulating change. One might say "What principle or principles can be said to grow out of this assumption which I hold, and which principle will give direction to my action as a supervisor?" This principle might be acceptable and is offered: "The supervisor who *plans* a supervisor-student contact stimulates *planning* on the part of the student." It is noted that there are two phenomena, the supervisor who plans and a student who is stimulated to plan. Need you debate whether there is a persisting relationship between these two phenomena? It is neither my purpose nor my responsibility here to debate this relationship. You either accept it or you reject it. Our problem here is to explore theory which is related to the supervision of professional laboratory experiences. You may reject this principle. If so, develop one of your own. There is no harm in so doing.

Reference again is made to one of the assumptions stated earlier indicating that "personal and situational factors influence behavioral change." You may develop a statement of principle from this assumption that might be like this,—"The supervisor's careful assessment of the student's personal and situational factors suggest clues for directing and controlling behavioral changes." You will note at this point that in stating the principle we have moved over into one of the terms indicated as components of process in the design. You may identify the two phenomena in this statement of principle and you may or may not accept the fact that they have a known and persisting relationship. If you accept them, we are in a position to follow our theoretical approach to a program of supervision by moving to those objectives which grow out of the assumptions stated via the principles deduced.

The objectives related to the above assumptions and principles might be something like this: "I will put in writing a plan for supervision that will structure the supervisor-student contact and set a pattern for the students planning behaviors." This perhaps may be a little confused with respect to the words that are used, but it simply indicates that there is a factor of emulation that may be operating as one of the strong educational influences in the life of the student. It says that you as the supervisor would be committing yourself to writing a plan which can be shown to someone else and which can be presented to the student teacher. You may do your supervising via that plan, thus, encouraging the student to direct his own behaviors by planning.

I realize that many may react at this point that only the nonsupervisor can advise the supervisor to take the time to do these things. Perhaps so! The fact remains that I was not invited to discuss how supervisors could accomplish supervision painlessly. I accepted the assignment to pursue the use of theory in giving each of us direction to our selection of supervisory behaviors.

The supervisor, who is so grossly outnumbered that he has no time to study or think, is not going to act upon these principles. In fact, such a supervisor probably has no supervisory plan at all. He simply is trying to follow the original plan of life, namely, survival. More seriously, though, one might select another objective, such as "make the evaluation of the supervisory plan a part of the cooperative evaluation of the student." Remember this the next time you are about to submit a hapless student teacher to an evaluation by the pupils or teachers in his cooperating school situation. You may be asking him or her to do something to which you would not submit your own educational responsibilities. Why not make your own supervisory activities a part of the evaluation plan for student teachers? Remember now, the earlier stated assumptions and let them disturb you until you are more aware of the consequences of assumptions. How about the one which indicated that there are many personal and situational factors which influence behavioral change? Who knows but what you as a supervisor have been one of the situational factors in the life of the student teacher which has influenced his behavioral change? It would seem important to recognize in our theory that, if you are a factor, you should be evaluated.

Perhaps at this point, we should avoid tampering further with the notion that theory is something that ought to be related to behavior. Perhaps you would rather leave it to the philosophers and the scientists and simply say that you as supervisors of student teachers are the practical work-a-day world of this phase of the college level preparation of young teachers, and that you have no time either to be bothered emotionally or to be evaluated professionally on the basis of such silly notions. If that is your choice, we can proceed to what else we may incur as obligations as we look at this business of theory related to the supervision of professional laboratory experiences.

Returning to the chart once again you will note that there are two other steps in the so-called action pattern. These steps are the determination of the criteria by which judgments will be made and the procedures by which you will carry out the particular processes which seem best to serve your purposes in anticipation of acceptable products. The *criteria* will be discussed in connection with the products and the *procedures* will be discussed in connection with the components of process as indicated on the chart.

It is well to turn again to the major categories in the bold print at the top of the chart. These are the so-called five Ps, namely, *purposes, patterns, participants, processes,* and *products*. In discussing the action pattern, we were dealing essentially with the selection of purposes for the supervisory program. It is well worth some time, occasionally, to ponder on the patterns within the institutional organization in which the supervision takes place. There are many different structures for the organization of schools and departments of education, even of departments of professional laboratory experiences. The reason for scrutinizing the pattern occasionally is to see whether the organizational pattern is serving the basic purposes of teacher education or whether it has been turned away by what may be called an operational pattern into the private domain of a particular person or group of persons on campus.

There need be no sect of professional laboratory experiencers. There is great need for the professional laboratory experiences to be an integral part of the total program of an institution for the preparation of teachers.

The merits of varied patterns can be argued at great length but, perhaps, need not burden our consideration at this point as they relate to the supervisory program. Before turning completely from the consideration of patterns, however, it is well to mention that there are two functions that belong within the organizational and operational patterns. These two functions are the *contributory* and the *supportive*. These functions pertain to the way that people act in any particular position. It is not necessary to usurp all prerogatives with respect to any phase of the teacher education program. Each person assigned to a unique responsibility must see it in relationship to other responsibilities assigned within the institution. The contributory function is a sharing function in the actual carrying out of the purposes of the institution. The supportive function is the way that you act toward those other people who have some responsibilities in the program. It is disheartening to find the Head of a Department, the Dean of a College, or any "Indian" member of any segment of the institution who finds it easy and satisfying to make unpleasant and depreciating remarks about a colleague. The supportive function is just the opposite of this type of behavior. It is that behavior which cheers the successes of others and which seeks out opportunity to reenforce the acceptable behaviors of colleagues and peers. Thus, there are responsibilities within the area of patterns.

Turn, then, to the third category—*participants*. There is a uniqueness in the professional laboratory program insofar as supervision is concerned. There are some very loose relationships in the teacher education program,—such as the control of a college staff over the student or the influence that the college staff may exercise upon and over the teachers of the cooperating school. There are defined limits of autonomy to be recognized by all three participants in the professional laboratory experience program if peace is to be maintained and a favorable learning experience to be encouraged.

The fourth category, namely, *processes,* is indicated on the chart as being composed of four components. Each component is designated by a pair of words. These are directing and controlling, stimulating and initiating, analyzing and appraising, and designing and implementing. As one reviews his assumptions in terms of purposes, his principles in terms of purposes and processes, his objectives in selecting specific behaviors, he must make decisions with respect to the relative emphases that will be placed upon any particular component of process. There are times, no doubt, when a great deal of directing and controlling exists in a supervisory program of a city school system. It exists in a form and to a degree that perhaps can never be characteristic of the directing and controlling processes that exist between an institutional supervisor and the staff members in the cooperating schools. It seems then, that the emphasis on the selection of dominate components rests as much upon the total situation as it does upon the urge of the supervisor to select behaviors by personal intent. In all probability the supervisor of professional laboratory experiences must rely more heavily upon those behaviors which are designed to stimulate and initiate or analyze and appraise than upon those behaviors which will characterize the other components process.

The most important thing to note in connection with the selection of behaviors that will constitute the processes of supervision is to recognize that a one-process pattern of supervision is unsatisfactory in almost any situation. It is with this in mind that there is introduced into the chart at this point the five characteristics which are called the *operational balance*. The supervisor must be perceptive of his types of students and the situation in which they have their professional laboratory experiences. Perceptivity means that he would be sensitive to the fact that both personal and situational factors are involved. The supervisor must be sufficiently perceptive of the dominate interests of the cooperating school in discussing the experiences with the student if he is to offer appropriate suggestions without, at the same time, undermining the confidence of the student.

The second characteristic of operational balance is *autonomy*. The supervisor must recognize that a certain type of autonomy in supervision may be exercised with teachers of elementary school pupils that could not be exercised over teachers of college-age student teachers, particularly, since cooperating teachers must carry on this part of teacher education while meeting the responsibilities of the many expectations placed upon them by their own local school district. Thus, these characteristics of balance may help the supervisor to assess the reaonableness of the dominance or emphasis that is given to one or more of the components of process. Certainly the characteristics of operational balance would eliminate those supervisors who constitute what we might call the "one-criterion supervisor." It is meant by this that the supervisor looks for one dominate characteristic in the college student and in the cooperating schools. If, perhaps, the one-criterion is lesson planning, it becomes more important to the supervisor to see that the student develops lesson plans according to a certain pattern than to see that he adapts to the requirements of the teacher in the cooperating school. It is a happy situation when the supervisor is able to view all of the possible components of process and, then, to test his use of these in terms of a series of characteristics which will bring balance in his supervisory behaviors.

The final outcome of any instructional effort, or for that matter of almost any human effort, is that of products. We select purposes, we exercise initiative, we expend energy, we involve people, we devise techniques for the purpose of accomplishing something. One of neglected areas in the field of teacher education has been that of the evaluation of the products of college teaching. We have long hidden behind the notion that it is impossible to determine when good teaching has taken place, yet there are many practical people who are making these judgments without worry at what it may do to our statistical procedures or the instrumentation of institutional research. Too often we have avoided judgments about the quality of products because we fear that we do not have a mastery of all of the possible procedures of evaluation. In so doing we omit some simple devices or even some highly sophisticated devices which can be used with a certain degree of security.

The concern at this point in discussing theory as related to the supervisor of professional laboratory experience is not so much a concern with the outcomes in terms of student learning as in outcomes of the supervisor's successes. It seems unfair in a city school system to permit a supervisor to go about his yearly duties and at the end of the year to summarize the pupil successes as products of the educational program, and thereby, claiming successes for supervision. It is possible for supervision to be of the lowest possible quality but, with superior teachers in the classrooms who refuse to be handicapped by inferior supervision, a good pupil product results. So it is that our theory here relates to the supervision of professional laboratory experiences in terms of the supervisor successes rather than in terms of the pupil successes. Who knows, if we depend upon the evaluation of supervision in terms of student teacher success, whether the major reason for success may have been in the registrar's office where a high level of effective selection for admission to the program had taken place? It is unfair to permit the supervisors of student teaching to take a free ride on the high level performance of some other segments of the institution and claiming nevertheless, that the high level of expenditures or the demand for increased expenditures is appropriate on the basis of student teacher successes.

Just now I wish that this particular part of the discussion might be left out or that it might have been presented earlier. It is always painful to bring the responsibility for such things home to each one of us who must not only face a responsibility but, more specifically, face a responsibility appropriate to the expectations for which we have been employed. Perhaps the five criterion measures as suggested in the design for a program of supervision might be adapted to the professional laboratory experience type of supervision. It would mean that any determination of professional maturity on the part of the students would become the measure of the supervisor's success, rather than the student's success in teaching pupils to read or to perform or to know in some area of development. The measure or the specific subcriterion measures of professional maturity should be adapted to what might be expected of student teachers. One evidence might be found in the extent to which the student teachers at the close of their period of formal education honor contracts which they have signed rather than to assume that one contract supplies protection to them while they shop for a better one. The extent to which this happens can be considered one of the ways of evaluating the products of supervision. If we by-pass criterion measures of this type, we go directly to an appraisal of how well the students taught the pupils in the class of the cooperating school. Who knows the extent to which the supervisor rather than the cooperating teacher, or rather than the character of the pupils in the class, or even rather than the quality of the student teacher himself or herself is to be credited.

In terms of curriculum developments, it is possible to determine the extent to which students in their professional laboratory experiences can provide for themselves opportunities for anticipating curriculum developments. It is not necessary that the student be able to find a cooperating school in which these developments are made possible in order to evaluate the quality of supervision. It would be possible to follow through in similar manner the other criterion measures, but since our responsibility here is to give some indications as to how a theory can be related to the supervision of professional laboratory experiences it is not necessary to pursue the point beyond the stage of illustration.

Now that we have had a look at various assumptions, notions, hunches, principles, objectives, components of process, characteristics of operational balance, criterion measures for the evaluation of products, it is well to raise the final question, namely, so what does it all mean to me. You, perhaps, individually are the ones who must answer this. You have had presented here a theory as developed by two authors. You have seen one of those authors attempting to indicate how the theory may be related to the practical responsibilities of the supervision of laboratory experiences. You are not even invited to accept this theory. You are urged to develop your own. You may appropriate any part of this one that you care to use. You should not miss the advantage of assessing those things that go into the reasons for selecting the supervisory behaviors that characterize your day to day work. These should be scrutinized even though you do not put into writing an organized body of notions that constitute a theory for you.

I draw the conclusion that a theory, this theory, your theory, or anyone else's theory probably can be related to professional laboratory experiences. But will it or will they? The only one who can answer this question is each of you or each of us. The invitation is to custom-build your theory of supervision. Do not pattern it after the practices to which you have become endeared. Rather try to analyze your endearments in terms of the reasons why you arrive at such a state or stage. If you are unable to develop any sort of a rationalization, then, it might be wise to begin building your own theory from the ground up. Finally, I urge you not to wait for the theory-practice syndrome to be automated. It may never be.

CHAPTER III

Theory Underlying Proposed State and Federal Support to Promote High Quality Student Teaching

L. O. ANDREWS

Deciding which approach to take with a topic of such huge proportions reminds me of the question put to the man who, suddenly, for no apparent reason became blind. After several doctors examined him without success, he went in desperation to a chiropractor, who tried several major manipulations. Amazingly, one treatment restored the man's sight but erased his memory. Another reversed the process, leaving him blind. Finally, the chiropractor said, "I'm sorry, but you'll have to *choose*. I can fix it so you can see but not remember, or so that you can remember but remain blind." Without hesitation the man replied, "Oh, that's easy. I want to see where I am going. I don't need to remember where I've been."

I am not giving you that choice. For too long we have failed both to remember and profit from our experience in this field of state and federal support for student teaching, and to look far enough ahead to set some long range objectives toward which we should strive. Our day to day practical problems are so absorbing that theoretical analyses and projections are all too infrequent.

Student teaching and related professional laboratory experiences for prospective teachers is a large, complex area with great diversity in pattern and quality and thus any brief analysis must be very selective. Three issues only will be discussed—*Control, Quality* and *Finance.*

Some might first raise the question, "Why all this sudden concern about financing student teaching? What is wrong with what we have now?" Three groups of brief observations about the present situation, and some of the problems and their historical background are included here to serve as a partial answer to these questions and as a backdrop for the discussion of the three issues.

THE PRESENT FACTUAL SITUATION

1. Nearly half of the colleges make full-day student teaching assignments, and about the same proportion use a half-day as a minimum,

while the remaining, perhaps 10%, are still using a one or two-hour a day pattern.

2. Probably over 90% of student teaching is now conducted in off-campus, non-laboratory schools—chiefly public schools with no college control.

3. The proportion of college graduates prepared to teach has increased markedly from 26.6% in 1950 to 37.7% in 1962.

4. The enrollment in student teaching is increasing at a far more rapid rate than public or parochial school enrollments and even faster than college enrollments.

5. Most large institutions, and even many smaller ones, are steadily moving their student teaching programs out into ever larger geographic areas.

Some of the Acute Problems and Pressures

1. Many colleges are faced with an appalling lack of well qualified supervising teachers, with the proportion of teachers working with their first student teacher often running as high as 30% to 40%.

2. Some city school systems working with several colleges have set a maximum limit on the number of student teacher placements, and have adopted very restrictive unilateral conditions for college operations.

3. Increasing numbers of colleges are encountering extreme competition with other colleges for able supervising teachers, and often even for any type of placements.

4. The very rapid turnover of college supervisors and administrators of student teaching is accentuated by the lure of more prestigeful professorships, research contracts, graduate teaching assignments, and other collegiate administrative posts.

5. Administrators of student teaching are constantly harassed by very inadequate budgets with which to provide adequate laboratories in the schools, travel funds, staff for supervision, and the upgrading of personnel, as well as support for even simple studies and modest research projects.

Some Impressions from a Backward Look

The record of the past gives a better perspective of present-day problems, but scant encourgament for quick solutions.

1. There is no adequate, comprehensive, theoretical analysis of the contribution of direct experiences in teacher education. The best single statement is still Dewey's short essay published 61 years ago.

2. Forty years ago most student teaching was done in laboratory schools where the average load of a teacher was six to eight student

teachers at a time, and 15-25 a year. Today in the public schools the load is seldom over one or two student teachers a year.

3. In the 1930's a surplus of degree holding, certificated secondary school teachers developed. This condition provided a supportive setting in which a wide variety of laboratory experiences—including professional, post-certification internships—were conceived, designed, put into use, and studied. Shortly a similar surplus of secondary academic teachers will produce a suitable climate for the lengthening of teacher education curricula and the development of new forms of advanced professional experiences.

4. Nearly everybody, even the severest critics of teacher education, accepts the common sense reasonableness of student teaching, and this has tended to lull teacher educators into complacency. As one result, basic and applied research and much needed program development and improvement have been neglected.

5. From 1910 to 1940, research in this field blossomed vigorously, but unfortunately was largely superficial and premature. To mount significant research in student teaching will usually require an extensive team of specialists from several disciplines, very large grants, and time for a longitudinal approach.

With these 15 observations as a frame of reference, let us consider the first of the three issues.

CONTROL AND ORGANIZATION OF THE TEACHER EDUCATION LABORATORY

In 1935 Raleigh Schorling drafted 14 principles which are surprisingly appropriate today except for the 11th which reads, "An institution should not give credit for directed teaching unless that institution exercises adequate control over the directed teaching situation." The shift to the use of the public schools clearly violated that principle. But the profession never developed a substitute principle to take account of the change or to guide the development of student teaching in noncollege controlled schools!

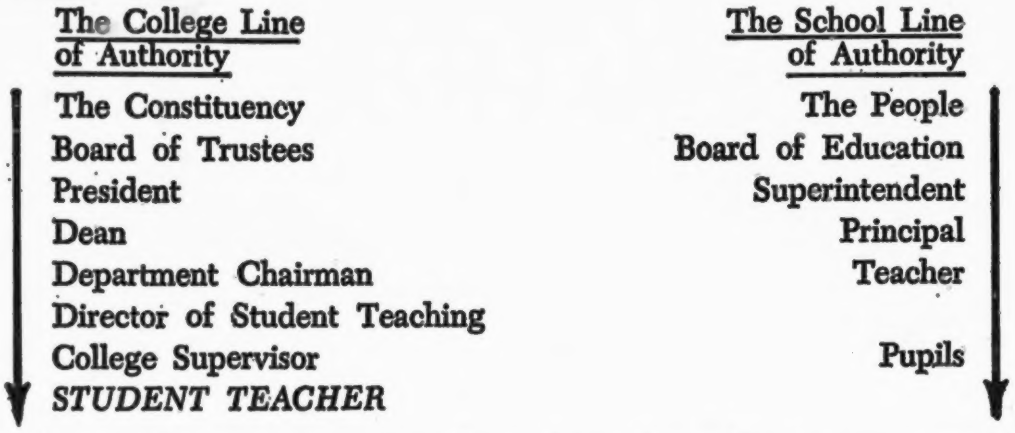
The confusion even on theoretical grounds is well illustrated by two quotations: In 1956 Myron Lieberman observed,

> If practice teaching is to be a genuine professional internship, it should be taken under the supervision of those who give the theoretical training.

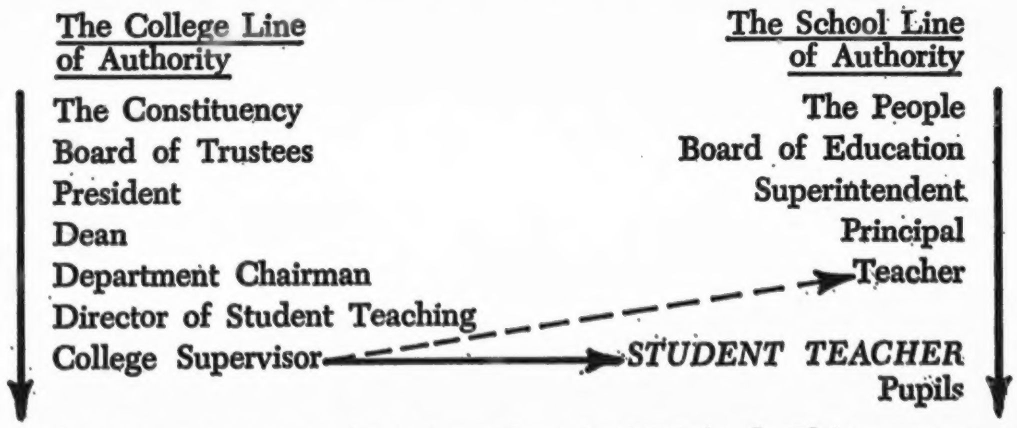
On the other hand, in 1957, Paul Woodring, concerned over the uncertain roles of the various supervisors and the problems of time and travel, predicted,

> . . . that responsibility for supervision for the intern will gradually pass from the college to the public schools.

Organization


The College Line of Authority
The Constituency
Board of Trustees
President
Dean
Department Chairman
Director of Student Teaching
College Supervisor
STUDENT TEACHER
The School Line of Authority
The People
Board of Education
Superintendent
Principal
Teacher
Pupils

In a college, the line goes down from the public or some constituency through the board of trustees, the president, the dean, the department chairman, the director of student teaching, the college supervisor, and finally to the student teacher. In a school, the line of authority goes down from the public through the board of education, the superintendent, the principal, the teacher, and finally to the pupil.


The College Line of Authority
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Board of Education
Superintendent
Principal
Teacher
STUDENT TEACHER
Pupils

Then these two entirely independent institutions decide to cooperate in teacher education, and to move the student teacher bodily between the teacher and the pupils in the school line. The situation becomes confused when standards of practice indicate that the teacher can never relinquish his authority, but can only delegate responsibilities temporarily to the student teacher. But the problem is further compounded when the college supervisor is introduced into the school—a college staff member who does have definite authority over the student teacher, but not over the subject matter the student teaches, the methods he uses, or the day to day details of his activities. Legally, by agreement, the college supervisor usually enjoys a professional-guest relationship to the supervising teacher, and even then in only a staff and not a line relationship.

There is an old saying, "What's everybody's business, is nobody's business." Here are two separate institutions, with separate control, separate budgets, cooperating in one professional responsibility. To do this well requires substantial budgetary resources on both sides. In practice, almost universally the real budgetary needs fall down between the two institutions, unheeded and unmet by both.

Responsibility for Supervision

Over the years the patterns for dividing the responsibility for the supervision of student teachers between the college and the school have varied markedly. Historically the earliest might be called the *Laboratory School Type*. Laboratory school teachers were employed for two purposes, to teach boys and girls, and to supervise student teachers. A director of student teaching made the placements, conducted the weekly seminar, assisted with problem cases and did perhaps 10% of the supervision. Laboratory school teachers performed all the day to day supervision, including conferences and evaluations—often 90% of the supervisory responsibility.

In a few public school situations, an early *Public School Type* developed. Some early agreements required the schools only to furnish a place for the student teacher to work, and the college supervisor carried up to 90% of the supervision—albeit probably illegally and certainly from a professional standpoint, unethically. Many professionally minded teachers voluntarily took on 40% to 60% of the responsibility for supervision and carried it very effectively.

RESPONSIBILITY FOR SUPERVISION

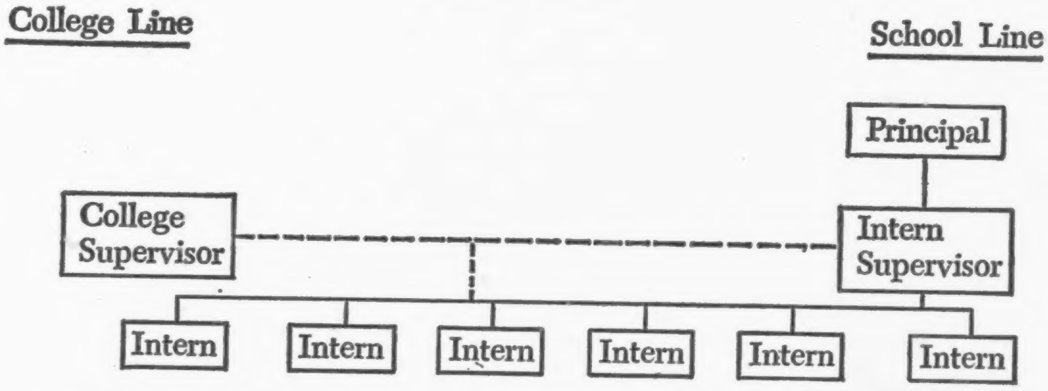
Laboratory School Type		Early Public School Type	
Director of Student Teaching	Laboratory School Teacher	College Supervisor	Public School Teacher
10-20%	90-80%	90-80%	10-20% (40-60%)

Professional Type	
College Supervisor	School Teacher
20-40%	80-60%

In some public schools a *Professional Type* of organization for supervision is beginning to emerge. Although the public school teacher is employed primarily to teach pupils; here he is specifically prepared to direct the growth of student teachers as a planned part of his assignment, is experienced in teacher education, and demonstrably competent to direct the growth of a professional neophyte. The college supervisor would supervise primarily through the activities of the public school teacher. This pattern requires both a careful delineation of roles and an adequate number of superbly qualified public school teachers who might be called *teacher education associates,* or even *clinical professors.*

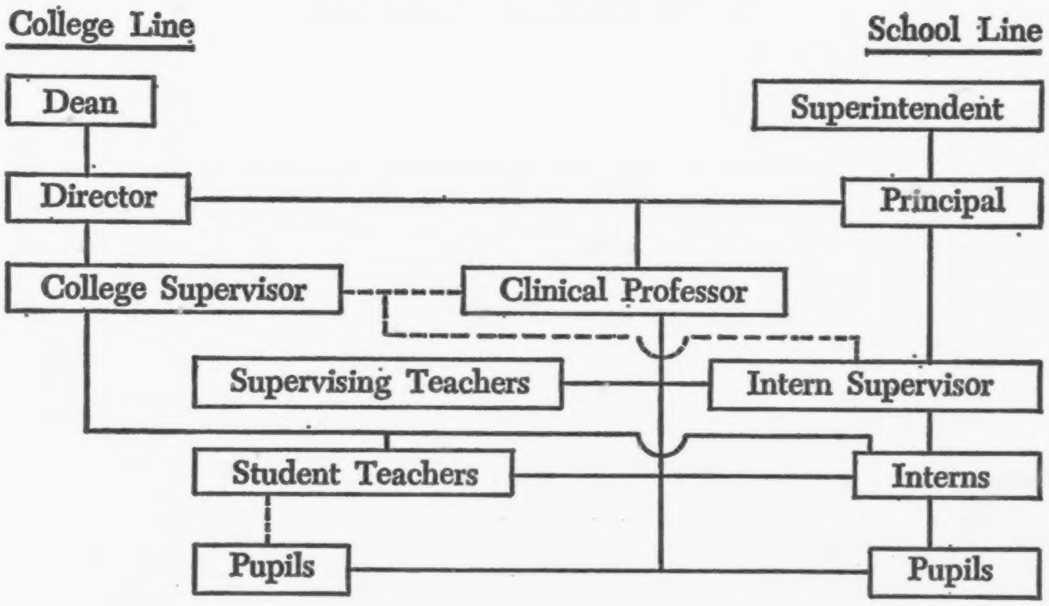
Since World War II, a great variety of old and new patterns have come into use including apprenticeships and internships. The terminology in use is very confusing, but for clarity an intern should always be defined as a student in a teacher-education program, who is actually employed as a full-time or part-time teacher. Immediately the organizational relationship changes, and the supervision of the intern becomes an official responsibility of the school regardless of what supervision is provided by the college. Frequently school systems have capitalized on this new relationship, and by paying the interns a reduced salary have had savings with which to employ a full-time teacher-intern supervisor for groups of four, six, or eight interns.

INTERNSHIP



Under the Oregon Teacher Education Project, the University of Oregon has developed a variation which combines student teachers, interns, and a clinical professor into one pattern. The college line goes through to the student teachers, while the school line of authority goes down through the interns. The clinical professor is an employee of both the public school and the college and carries both a line and a staff relationship to all individuals involved. The college supervisor continues to have only the staff relationship of the professional guest, while the clinical professor teaches pupils half-time, provides in-service programs for intern supervisors and supervising teachers, orientation and seminars for both types of students, gives "spot" supervision, and serves as chairman of the "clinical" team. This complex organization is designed as one approach to some of our persistent problems. But new ones arise, such as whether many persons can work satisfactorily in this joint appointment with responsibilities to both a college and a school system. This is only one of a number of different plans which have been designed and are being tried out in various parts of the country.

MODIFIED OREGON PLAN


College Line
School Line
Dean
Superintendent
Director
Principal
College Supervisor
Clinical Professor
Supervising Teachers
Intern Supervisor
Student Teachers
Interns
Pupils
Pupils

In summary, many new patterns must be designed, explored, and researched before the profession can move forward with confidence. Few institutions can finance such an exploration without extensive outside assistance.

QUALITY OF THE STUDENT TEACHING EXPERIENCE

I should like to share with you a simple schematic approach, oversimplified it is true, which helps me to review the goals or objectives which colleges list for student teaching. This approach also emphasizes the high quality we should all like to achieve, and, I believe, could have, if we could marshal the many kinds of support which would be required.

Reversing the usual order, let us start with a necessary but very restricted aspect of evaluation as the bottom or base line goal, (Item No. 1 below) and proceed upward through a series of briefly stated objectives or types of experience. These items are believed to be increasingly more important, more significant, and certainly more difficult of attainment as one reads up from item one to item eight.

8. Demonstrated professional competence (Consolidated professional skill and assured professional self-confidence)
7. Professional decision making (Action based on principles, values, and thoughtful analysis)
6. Insight, judgment (Developing professional perception, intuition)
5. Professional understanding (Dewey's laboratory function)

4. Skill in directing learning (Cookbook perfection)
3. Meeting the challenge of reality (Keeping school)
2. Association with a superior teacher (Imitation)
1. Evaluation (Judgment Day—for certification)

In the past and in other countries the student has been assumed to have been taught to teach in college classes; and is required to teach a particular lesson to a strange class before a group of judges, who then *evaluate the applicant's fitness for certification.* Surely this first level alone is the lowest possible total objective for a student teaching program, even though a necessary function. At the second level many seek to *place the student under a superior teacher,* as Conant advocates; but if the supervisory direction is limited in perspective, the learning may be largely at the level of imitation. Unfortunately, many have not yet realized that a strong teacher is not necessarily, *ipso facto,* a skilled director of the learning of a neophyte professional.

Student teaching was moved to public schools in part to secure a *more realistic laboratory;* but even today many supervising teachers evaluate a student's success primarily on his ability to "keep school." Every student teacher needs to make his own reconciliation with reality—the third objective—but no profession can develop to very great heights on this basis alone. Probably the most commonly stated and generally accepted purpose of student teaching is to bring about a wedding of theory and practice—to put into practice the methodology taught in college. Unfortunately, for many college students, their real understanding of theoretical methods is so low that their attempts to translate their textbook knowledge into *skill in directing learning* is likely to be at the cookbook level.

Developing *professional understanding of knowledge, theories, concepts, and of the real meaning of teaching* is a goal of student teaching which does not even occur to many supervising teachers. Dewey's essay on "The Relation of Theory to Practice in Education" gives us a vision of how much more meaningful direct experiences could be. The pressure of increasing numbers of teacher-education students may and often does result in the elimination of most pre-student teaching experiences, so that many student teachers have very low levels of readiness for teaching. But even under these conditions, experience suggests that *insight and judgment can be increased* by wise direction and good accompanying intellectual seminars; but that there is nothing automatic about the development of these higher powers of perception at the sixth level.

The best treatises on student teaching, such as the so-called Flowers Report of these two associations in 1948, emphasize the importance of *developing skill in making decisions based on thinking, principles, and values.* Today many supervising teachers are not prepared to direct this level of learning, much less attempt to use the techniques and ideas of some of our present day leading analysts of teaching such as Flanders, Smith, Hughes, and Bellack. With the challenges of teaching greater than ever before, and often the tasks themselves more difficult, why should not we bring our prospective practitioners up to a *level of demonstrated competence* such that we reduce their chances of rapid regression to perform in the way they were taught. We could also reduce the insecurity of our beginners if their growth was continued until they have some assured self-confidence in their professional skill and some pride in their profession.

Probably most directors or coordinators of student teaching would admit in private that they have some, if not many, supervising teachers and even an occasional college supervisor who do not have this vision of student teaching, and who are not now competent to provide this range of experiences. Many directors know full well that some student teachers have an experience that could hardly be more horrible if we had deliberately set out to make it so.

It would be interesting to know how many of the directors today actually believe that they have the resources in budget and personnel to provide a program for their students as rich as this list of eight goals. Probably most have some staff members who could work effectively up through goal five or six; but to reach seven or eight would require extending and redesigning student teaching by both the schools and the colleges. This will require financial resources which simply do not exist today in the budgets of most schools and colleges.

FINANCING HIGH QUALITY STUDENT TEACHING

Who should pay for a high quality program of student teaching? In the days of laboratory schools the answer was clear—the college. But today most student teaching and other professional laboratory experiences are carried on in public or other schools entirely separate from the college. As one of the results of this shift, nowhere in teacher education is diversity greater than in the ways and the amounts, as well as in the absence, of compensation paid to cooperating schools and teachers.

From time to time a few leaders have been advocating state responsibility for support for student teaching programs. In 1930, A. R. Mead, in his book, *Supervised Student Teaching,* projected a comprehensive state plan in which institutions would be required to have good laboratory facilities (similar to the situation in medical education) before being approved for teacher education. But Mead also proposed that when otherwise strong institutions were without adequate laboratories, the state should take the responsibility to secure them. L. D. Haskew in 1949 advocated state responsibility for developing and supporting a state plan of student teaching, and he detailed its components. Conant recommended state responsibility for student teaching, a state plan, and extensive state support for what he said is a function outside the basic responsibility of the local school board to educate the boys and girls of the district.

Since the states have been slow to make appropriations for student teaching except in the budgets of the state supported institutions, who is going to support quality programs? Most public school systems are not likely to allocate substantial sums for teacher education; nor are colleges likely to be able to allocate a larger share of their budgets to student teaching during this period of soaring enrollment. In several states, with the close cooperative effort of schools, colleges and the state agencies, some specific state appropriations and improvements may be possible. The haunting question remains, "Can this approach bring results fast enough to meet the needs of today and tomorrow, not 10 years from now?"

Is there any evidence that added support can affect the quality of program? Most past experience is disappointing, both because of the limited support that has been available, and the lack of care in its design. For example, Georgia has had 15 years of experience with a state plan of three levels of approval and preparation and of direct state payment to supervising teachers, but the 20, 30, or 50 dollars per student teacher is so little that never in the 15 years have they been able to get half of the active supervising teachers up to the second and third levels of training and experience.

On the other hand, Sam Wiggins reported in 1953 that when a group of private institutions went together to put on an extensive program of special preparation for supervising teachers, they were able to make a demonstrable difference in the effectiveness of these teachers. The Texas Teacher Education Project in 1960 reported that high quality student teaching, as they designed it, actually cost an extra $775 per student teacher. The Oregon Teacher Education Project is now demonstrating that an extensive program of upgrading the skills of school and college supervisors can be provided with a well financed state program, and that added clinical professors can add services which most of us just dream about. Some New York institutions will probably have little difficulty in finding evidence that the state sponsored workshops last summer raised the understanding and performance of the supervising teachers who participated.

At least three legislatures have bills before them seeking appropriations for the direct payment of supervising teachers—direct state operational support, if you will. In itself, just paying a teacher more for a service the teacher is now rendering is not likely to improve quality significantly.

Since so little exploration has been made in this field, we must rely far too much on personal judgment. But to illustrate the possibilities, I submit my own personal list of priorities. I do not object to direct payments by the state to supervising teachers, but I think that each of the items above the seventh has a greater potential for improving the quality of the program—certainly for the immediate future until we develop workable standards for the selection and approval of supervising teachers at various levels.

A PROPOSED STATE PROGRAM OF FINANCIAL SUPPORT FOR STUDENT TEACHING PROGRAMS

In order of priority:

1. Extension of public school administrative and supervisory service for teacher education functions.
2. A state system of in-service education for supervising teachers.
3. Professional books and materials for cooperating schools and teachers.
4. An extra step on the salary scale for teachers reaching the highest level of preparation and experience in teacher education.
5. Released time for supervising teachers from non-instructional responsibilities.
6. Released time for supervising teachers from instructional responsibilities.
7. Payment directly by the state to supervising teachers on a per student teacher basis.

When school systems are deeply committed to the importance and improvement of student teaching, and can and do allocate staff time for system wide and building coordinators, the climate for teacher education can be and frequently does become demonstrably superior. A comprehensive system of well designed in-service upgrading of school and college personnel can improve their effectiveness in directing student teaching.

FEDERAL AID FOR STUDENT TEACHING

Several arguments can be cited for federal support for student teaching as a real federal responsibility, for example:

1. If our country needs a highly educated citizenry both for security and for economic reasons, then surely well qualified teachers are a major national resource, and direct experience is a major part of teacher education.
2. Of the states on which data is available, nearly one of five beginning teachers is employed outside the state in which he graduated.
3. Federal aid has been used for over 100 years to assist in highlighting urgent shortages and supporting activities which cannot be supported easily through the usual channels. Student teaching has not

been adequately supported and is very difficult to support under the present dual institutional approach.

4. Teacher education in its laboratory aspects has just as critical and specific needs as some of the other professions for which the Congress has appropriated both specific grants and operating funds.

The 88th Congress may very well have reached the high water mark in the appropriation of categorical aid to various aspects of higher education, and, thus, teacher education may be too late to get that kind of assistance. Of the two major road blocks to general federal aid to elementary and secondary schools, one, civil rights, has been settled legally, and will gradually be resolved operationally. Initial steps are being taken to develop a policy on the second problem issue—the church-state issue—although it may be some years before a sharp definition of acceptable practice is reached. Eventually, general federal aid to elementary and secondary schools seems a certainty, but that probably will not of itself solve the financial problems of student teaching.

Support for the improvement of teacher education, and student teaching specifically, was included in The Quality Education Bill of 1962, the Kennedy so-called Omnibus Education Bill of 1963, and the rejected portion of the Johnson Budget of 1964. But the present administration-sponsored identical bills, S370 and HR2362, take another approach. In addition to the three general proposals, the bills would strengthen and broaden the categories of Cooperative Research and provide funds for research facilities, and give matching support to state departments of all the states through grants for studies, demonstration projects, and upgrading of personnel. Teacher education and student teaching arrangements are specifically listed in Title V for the upgrading of state departments.

To put it very bluntly, we are not really ready for large appropriations for the support of student teaching because we have not done enough of our homework the last decade or so. But the present bill has given us a reprieve—another chance. If it should pass with Titles IV and V essentially intact, colleges, professional organizations, state departments, and cooperating groups within the states will be able to apply for grants for pure and applied research, the study of new plans and arrangements for student teaching, the design of programs and state plans, pilot operations, demonstrations, and the dissemination of findings. Since many of the problems in student teaching cannot be solved unilaterally anyway, this prospect should encourage college people to take real leadership in cooperative efforts to find solutions for problems and new ways to improve quality in local, regional, and state settings. In this latter effort, private foundations may assist greatly in finding answers, but they are not going to provide support for regular operations. We still have the task of finding an *adequate source of support for the ongoing programs of student teaching.*

SUMMARY

The load of student teachers supervised by a laboratory school teacher of 40 years ago was many times that of the typical public school teacher of today. But now with the skyrocketing of enrollments in student teaching and the shift to the use of the public schools, each year something like 40 to 50 times as many teachers work with student teachers as did then. We have never faced squarely the task of preparing these teachers for their work in teacher education.

Annually this country needs about 200,000 newly prepared teachers, but it will take a supply of perhaps 300,000 well prepared, competent supervising teachers to provide the laboratory experience. But, unfortunately, because of the short average length of service of teachers, at least 30,000 newly prepared supervising teachers will be needed every year. Thus far, only a minor fraction of this number receive formal preparation in any one year.

The contrast can be sharpened by comparing the situation in laboratory and public schools. Laboratory school teachers had extensive experience under favorable conditions for learning and often became very skillful in working with student teachers. Public school teachers normally have infrequent experience under unfavorable conditions for learning, and all too many have not yet developed either self-confidence or competence in their teacher-education role.

The national problem of preparing teachers comes into clear focus when the annual production of M.D.'s (9,000 now and to be raised to 11,000 by establishing 20-24 new medical schools) is compared with the 200,000 new teachers needed. It is often said that we spend at least 10 times as much to educate an M.D. as a teacher. Until we in education can improve the status of the profession, significantly increase the average length of service, and thus reduce the number of new teachers needed each year, we may have to be satisfied with the present level of competence of new teachers.

Efforts are being made to improve the academic and professional courses for prospective teachers as well as the direct experiences. But until we can provide better support for the laboratory phases of teacher education and dramatically improve the quality and range of these experiences, all these efforts in curriculum improvement may actually not result in significant improvement in the demonstrated competence of beginning teachers. And this is not the level of professional competence which America needs and ought to be getting. In fact, many directors of student teaching agree that the quality of student teaching may get worse on the average long before it can be improved significantly!

NEXT STEPS

Financial support is only one of many kinds of support needed at both the state and the national levels. The most obvious tasks ahead for the improvement of student teaching can be summarized in this order:

1. *Revised Definitions*—Revision and completion of the work begun by the AST at both the national and state levels.
2. *Rationale*—Immediate preparation by a small group of leaders of a statement embodying our best research literature, and subjective and empirical knowledge as a focus for encouraging improvement. This task cannot be delayed until the desirable research has been completed.
3. *Theoretical*—Completion of a preliminary theoretical analysis of the contributions of direct experience to the development of a professional teacher, and the designing of a project for a larger research-oriented attack on this task.
4. *Operation Bootstrap*—Development of model plans for voluntary co-operative arrangements including schools, colleges, official agencies, and professional organizations operating in different sizes and types of geographical areas, and for varying purposes.
5. *State Approach*—Development of suggested guides for state plans—including official and unofficial agencies—for minimum standards, desirable goals, policies, and procedures in such areas as institutional approval, program development, quality of student teaching, and the upgrading of school and college personnel.
6. *Financial Support*—Development of proposals and projection of strategies for securing state (and federal, if agreed upon as desirable) support for the improvement of the laboratory phases of teacher education.
7. *Operational Leadership*—Promote the analysis of the roles of the various positions, persons, and agencies in the previous items, and the best procedures for preparing the personnel involved. Highlight the need for upgrading the place of the administration of laboratory experiences in colleges, in public and private schools, and in state departments.

AST with its rather limited resources has Committees or Commissions at work on some aspects of points 1, 2, 3 and 5. AACTE has a Sub-Committee which has completed a study and produced a bulletin on point 4. AST and ACTE are readying a joint proposal for the development of criteria and content for institutionally sponsored institutes for supervisory personnel in student teaching as a part of point 7. But no national agency is actively developing general plans for securing support for these activities, although in at least four states funds are being sought for regular operations, which are not included in the above list.

We have plenty to do to provide the best program we can design at the college level. But if we really want to improve the quality of student teaching and related experiences, the organizations indicated above must go into the political arena in the several states (and in Washington, if that is their decision) and obtain substantial appropriations for this phase of teacher education.

A big order? Yes, indeed! But we urgently needed all of these tasks done last year, too, and the year before! There are plenty of urgent and challenging tasks to be done in each of the states and at the national level as well. If student teaching is going to be improved significantly in the next five or ten years, it is much later than we would like to think.

CHAPTER IV

Theory Underlying Professional Laboratory Experiences

HARRY N. RIVLIN

No aspect of teacher education better exemplifies everything that John Dewey spoke of than the work that is done in professional laboratory experiences. When you think of learning from experience and of learning through experience, when you think of learning as doing and doing as learning, where do you find better illustrations than in the professional laboratory experiences? I congratulate you who administer, direct, and supervise these professional laboratory experiences. It is to you that I direct this discussion. It is interesting to note that even Conant agrees that student teaching is important.

Your professional laboratory experiences are probably the only phase of education, of teacher education, or the education of teachers and for teachers, where you actually apply what you know about the psychology of learning. We in education have been accused of handing out brand new advice that we ourselves never touch before we give it to other people. Certainly, in terms of professional laboratory experiences, such a statement is untrue. Obviously, you agree that learning is an active process and that you learn only to the extent to which you yourself participate in the process of learning.

Obviously, you agree that gradation of experiences is important, and that learning must proceed from the simple to the complex, from the single unit to the total. Again, as you look through the sequence of professional laboratory experiences, it is clear that you begin with those experiences in which the student is most likely to be successful before you go on to the next ones. Whether you realize it or not, you have been using the principles of programmed instruction because the basic principles of programmed instruction are that learning must be an unbroken series of successes and that learning must be analyzed into such minute sections and into such minute sub-units that the students progress almost automatically. In a sense, you are in the vanguard of programmed instruction specialists.

Also, you recognize the importance of motivation. You recognize the importance of having the learner succed and of having him see the success almost immediately so that he has the knowledge of success as a powerful incentive for learning.

Furthermore, you apply, better than any of our other colleagues, the principles of situational learning, of learning in the exact situation in which the learning is to be used. In a sense, what professional laboratory experiences have achieved for the student is almost nothing compared to what professional laboratory experiences as a method of teaching may have in store for all of teacher education.

Teacher education has been criticized on many grounds. One is that it has never really developed a methodology of teaching. On the one hand, we try to make believe that we are just another liberal arts department, and so in order to convince our students how difficult it is to understand education, we have lectures, we have quizzes, we have recitation sessions. Then, on the other hand, we sometimes make believe that college is nothing more than an elementary school with bigger chairs, and so we bring into the college techniques that are inappropriate for adults. It may be that in professional laboratory experiences we have the beginning of a methodology which can be used in other fields of education as well.

Before you become too smugly proud of all that you have done, may I point out that while what you have done is significant and important, what you have not done, or what you have not done sufficiently, may also be significant and important.

One who is not a member of the Association for Student Teaching might even question the title of the organization, as though student teaching were something that could be isolated, as though student teaching by itself is sufficient. Clearly, it is not. Clearly, student teaching or professional laboratory experiences, if they are the only activities in which students participate, would be sufficient if education were nothing more than a trade. A plumber can learn to be a plumber by imitation. A plumber can learn to be a plumber by watching somebody else and then doing the job from the simple to the more difficult. Of course, if he is going to be a master plumber, he has to have a sense of humor or he could not possibly submit the bills that he sends. But one can be a skilled plumber merely through imitation.

Teaching, however, is so much more than a skilled trade that, unless we tie up with our experiences the theory that is important to help students develop insight, the tricks they learn are only tricks. We should not make student teaching and the other laboratory experiences either an end in themselves, nor, on the other hand, a fringe activity in which students participate only when they can, and only as much as they can. If we are not to fall into either of those traps, we need in our professional laboratory experiences even more commitments, even more supervision, and even more thought. Most of all, we have to work with our students in their field experiences so that they can see what it is they are looking at. Each of us has seen some students who have engaged in experiences and who got relatively little out of them because the students had little *understanding* of what they were doing.

What I am proposing is that our professional laboratory experiences be recognized as so important that they should become at least the center of the preparation of teachers, that they should be continued even after teachers have been licensed and are appointed, and that they be made the basis for much of what we teach, instead of being simply a concurrent activity.

I direct your attention to this because we are at a critical point in the development of American education. We are at the point where, if we take one road, American education can reach heights to which no other country in the world has ever dared aspire. If we do not take that road, we have the choice of going down the road of segregation until we see the end of public education as we know it.

I think it would be the cruelest of hoaxes if we ended one kind of segregation and then found that our public schools have become in a way so unresponsive to the ambitions and wishes of some of the parents that these parents withdraw their children from our schools and enroll them in private schools, or move elsewhere. If our cities, which face this problem in the most acute form are to solve these problems, they need teachers of a quality even higher than that of the teachers we have prepared so far.

What I have in mind is that in the past 50 years the problems of the urban teacher have become more and more acute. Why? Well, let us go back 50 years, and 50 years ago was 1915 and in 1915 we were in World War I. In the 50 years since February 1915 we have had war years, post-war years, pre-war years, hot war years, cold war years, years of inflation, and years of depression. In the last 50 years there has been hardly one normal year.

Think of a man trying to go from New York to Chicago when Chicago flights were grounded. He had to take the train. As he went aboard the 20th Century Limited in New York he said to the porter, "I know you tip the porter but I have never gone to Chicago overnight on the 20th Century. What is the average tip?"

The porter said, "The average tip on the 20th Century is $5.00."

The next morning the train arrived in Chicago. The passenger gave the porter $5.00. The porter thanked him and said, "This is the first average tip I've ever received."

In a sense we are still waiting for an average year in education, and while we are waiting we have had shortages in text books, shortages in learning material, shortages in buildings, and shortages of teachers. The one thing of which we have not had a shortage is short-cuts, and we are now paying the price for a succession of short-cuts.

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In these past 50 years, while we have been building up shortages, while we have been building up crises, we also found that the populations in our big cities were changing. May I give you just one illustration.

New York City since World War II has lost a population of 800,000 people in middle class families which have moved to the suburbs. The 800,000 makes a considerable sized city. We have also gained a population of about 700,000, gained them from Puerto Rico, from the south, from rural communities. The population of 700,000 is also a considerable sized city. The shift of population was more than just the exchange of some families for other families because we find families moving to the cities now for whom this move represents a tremendous step forward.

The new immigrants come for the same reason that the old immigrants came. Some come to escape persecution or discrimination; some come to escape from unwholesome and unpleasant living conditions; some come because they want greater opportunities for themselves and their families; and some come simply to escape. These are the same reasons that have led immigrants throughout the years, throughout the generations, throughout the centuries, to move.

The difficulty today is that our new immigrants are American citizens. They are American citizens who are not going to wait the generation it took or the decade it took older immigrants to be assimilated. In fact, we are not so sure that we want assimilation. Do we want a melting pot, or are we wise enough to try to retain in each group the culture that it has so that we become the richer as a nation for having a pluralistic culture instead of having everybody coming out stamped with the same machine tool die?

We find in our big cities a conflict, but not between right and wrong. Conflicts between right and wrong are easily resolved. When you have a choice between good and evil, you always choose good, at least on a multiple choice test. Our difficulty today is that even on a multiple choice test we do not know which to choose because now we have to choose not between right and wrong, not between good and evil, but we have to choose between right and right.

For example, there is the parent who is eager to have his youngster prepared for college. In the United States at the present time about half of the youngsters between 17 and 21 are enrolled in some form of institution of higher education. That represents in itself a tremendous national achievement because what we have succeeded in doing is that in a world where some nations are still aiming for compulsory elementary education, and where other nations are still hoping for universal secondary education, we dare hope for almost universal higher education. Therefore, as parents hear about the difficulty of getting children into college, what they want to know is whether our schools prepare our children for college. When they say "our children," what parents mean is "Will Charlie get into college?" If you have a program for the gifted which achieves miracles but does not include Charlie, the parents are not so sure the program is worth conducting.

On the one hand, you have the pressure for getting children into college and you have the pressure for the improvement of secondary education and elementary education because there is so much more to know, there is so much more to learn. We are all familiar with the tremendous advances that have been made in science. What we may not realize is that equally tremendous advances are being made in the arts and even in the social sciences. Some ten years ago, if you were told that some day there would be a man in orbit, you would have said it was fantastic. Similarly, if you were told ten years ago that in the United States there would be more than 1,000 symphony orchestras, more than 500 opera-producing groups, you would have said that was fantastic, too. In American culture, going to college is becoming the accepted practice and advances in science and in the arts and in reading and literature are coming to be the normal procedure. Parents want to make certain that their children are getting a sound academic education and that to me seems right.

Then you have pressure from another group, a pressure which comes from the 700,000 people in New York City who have just moved in after having taken a giant step forward. Are we to adjust our education so that these 700,000 can now achieve that for which they have the potentialities? I think that is a group that is also obviously right.

We have in the big cities, therefore, the problem of developing teachers of such skill that they can deal with the brightest youngster, they can deal with the most advanced youngster, with the most eager youngster, and at the same time they have to deal with a youngster who has not had the opportunity, or whose family has not given him the opportunity because it did not have the opportunity of beginning an educational process which in our culture is the avenue to success.

So we have a conflict, not between right and wrong, but between right and right, and we need teachers who can deal skilifully with the wide range of individual differences, with the wide range of interests, with the wide range of talents.

You who have demonstrated through professional laboratory experiences what you can do to develop teachers who are able to deal with the problems of a generation ago, you now have to develop teachers who can deal with the problems of the current generation, and of the generation to come. I should therefore like to propose to you some ways in which professional laboratory experiences can very well serve as the center of all that is to be done to develop the teachers we need.

As my first suggestion, I should like to drop the words "pre-service" and substitute for them "pre-tenure." The implication of the change is that the preparation of a teacher is not ended when he begins to serve in the school, but the first phase of his preparation carries right into the first two or three years of teaching, until he has been granted tenure and has become a permanent member of a faculty.

One of the basic problems in current education is that the colleges prepare good beginning teachers and then the schools treat their newly appointed teachers as though they were fully finished professional teachers ready to go anywhere. This, by the way, is a problem not only for the big cities, because as *de facto* segregation ends you find that these are the problems of the big cities, of the small cities, of the suburban cities and soon these will be the problems of all America.

When I refer to the difference between pre-service education and pre-tenure education, what I have in mind is that the first years of teaching are in a sense the most critical in the teacher's entire career. I think, too, that the way in which we treat our beginning teachers is different from the way in which any other profession treats its beginners.

When there is a case to be presented before the U. S. Supreme Court, I know of no law firm who would ask "Who has just been appointed here? Let him take the case." I know of no hospital that assigns its most interesting cases to the newest interns. Yet in schools, we regularly assign our newest teachers to those schools and those classes which present the greatest difficulty.

I am thinking of one of our youngsters in the city who was invited to her first formal dance and went to one of our department stores to get some perfume. She walked up and down the aisles and grew more and more confused. There was a very attractive display for a perfume called "Irresistible." Next was a rather attractive display for one called "Dangerous." Then came, of course, the one that you have all seen, "My Sin." This girl walked up and down and finally went to a salesgirl, "Do you have anything for a beginner?"

Clearly, what we offer our new teachers is not for a beginner. We have to be realistic enough, therefore, to reshape our methods of teaching, in fact, our teacher education program, so it ends not with the degree but it ends rather with tenure as a teacher.

Then I would like to propose, secondly, that we go back in a sense to the normal school, the training school that we have outgrown. Think instead of a new kind of a training school. The old training schools graduated people who were not as liberally educated as are today's college graduates, but on the first day after graduation these teachers were able to walk into a classroom and start teaching. Today we prepare our students as though we expected every new graduate to be a fully qualified professional teacher. In every profession there is the question: Should we prepare them for their first job or should we prepare them for a professional career? In teacher education we have swung just a little too far, I believe, in the pre-service years in terms of preparation for a profession rather than in focusing attention on the initial job.

This means, therefore, that the professional laboratory experiences in which students engage at college, if you accept the point of view that I am presenting, must help the teacher accept the responsibilities of classroom teaching as soon as he is graduated.

It is for that reason that I should like to propose a third point, namely, that a classroom teacher can make effective use of some professional assistance, and that serving as a sub-professional assistant can be an important part of preparation for teaching. I am thinking, for example, of the student aide who works with a teacher in taking care of those parts of classroom management that do not require the full attention of a professional teacher. Give the teacher that kind of assistance and the teacher can do better with a class. Give a student that kind of an experience and he has an introduction to the life of a teacher.

Then, I would have a second category, a category of assistant teachers. They are not student teachers; they are assistant teachers. Incidentally, I would also have them paid, and you, I am sure, will approve of this suggestion. When you bring this before the school superintendents, however, they usually do not see why additional money should be spent in this way. But when we come back to the idea itself, the assistant teacher who works with individual children, who works with small groups of children under the direction of the professional teacher, is expanding that teacher's usefulness and is also gaining professional insight which helps him become a more competent teacher. Then, when you have your person who has been a teacher aide, a community service aide, and an assistant teacher, it is then that he should be ready for the next step of internship.

Now, again, all this is familiar to you. We are all doing it some way or other, to some extent or other, but what I should like to see you do is to carry this even further and to recognize that after internship, what you have is a beginning teacher who should still have additional supervisory help, should have additional help from a college so that he can soon assume the full responsibilities of a teacher.

I also wish to present to you, too, the suggestion that we in the schools, and we in the colleges, make more effective use of the individual talents of our own teachers, of our own faculty members. A great deal of college time is spent in supervising professional laboratory experiences. Does this require the training which a college professor needs if good supervision is to prevail? There are, on the other hand, a number of teachers in our schools with the insight gained from experience who can be much more effective supervisors of these laboratory experiences than our college people can. We know of the shortage of college faculty. We know that that shortage is going to become even more acute. When there was a shortage of elementary school teachers, there were all kinds of programs for recruiting mothers and turning them into teachers almost overnight. This is not to suggest that we can make college professors in that way. Therefore, if we are to extend the usefulness of our college faculties, we will have to use our college faculties for those activities in which you need higher education, in which you need a doctorate if the work is to be done properly.

For example, we need people in the education of teachers who know what research has accomplished, and who know how to conduct the research, and it is not very realistic to expect a fifth grade teacher to have either of those two abilities. On the other hand, for a college to take a doctoral candidate or one who has received his doctorate and have him spend his time on public buses or in private cars going from school to school is a tremendous waste of human resources. What we need now is not a dumping of our students in the schools, nor, on the other hand, the assumption that only one who is called a professor has the ability to evaluate or to help. What we have to do is develop a kind of school-college relationship where our school people do what school people do best, and our college people do what college people do best.

When I was referring earlier to all that you in professional laboratory experiences have done to apply the psychology of learning, one of the things you have not applied sufficiently is the principle of individual differences. When a college requires eight weeks of student teaching, it requires eight weeks of student teaching of all students. There are some students who at the end of three weeks have gained more than you expect a student to gain from the eight weeks. Nevertheless, these students have to spend the next five weeks in student teaching. Although there are some students who are enrolled in a program which requires a year of student teaching, and it is obvious that they need more than a year, at the end of the year of student teaching they are treated as though they had satisfactorily completed their student teaching requirement.

I am wondering whether, as we look forward to modifying our programs for the preparation of teachers, we cannot modify the kind of experience and the length of experience that our students get.

I think students ought to have some service as a community service aide, especially if they are dealing with children of a culture other than their own. I think it would help a teacher to understand the kind of homes from which these children come if he were serving in some social agencies that engage in case work. I hope, by the way, that that experience will help eliminate the new stereotype, where we think of our underprivileged children as being illiterate, as being unloved, as being un-eager to learn—as though every middle-class child were loved at home and was just an eager beaver when he came to school and, of course, we act as though there is no illiteracy and there are no broken homes among the middle-class. I hope the student's experience as a community service aide will help him to see the person rather than the stereotype. Important as that experience is, there are some students for whom it is unnecessary. Important as that experience is, there are some who will need it for more than six weeks or eight weeks or ten weeks.

Therefore, as you look forward to your professional laboratory experiences, which are so often required as part of a course, or as a concomitant to a course, I am wondering whether the time has come to eliminate the fixed time limits for each activity and to extend them or to abbreviate them as the individual student seems to need.

As one way of tying all this together, I should like to see the laboratory school modified until you would hardly recognize it. I think most of our laboratory schools are on campus, but the problems are off campus. I think most of our laboratory schools cater to a selected group of youngsters, when the problems in education today are the problems of the youngsters who would never be admitted to our laboratory school. I think of the laboratory school as analogous, hopefully, to the hospital which is attached to a medical school. Except where that hospital also serves as an emergency community hospital, ordinarily the only people who are admitted to a teaching hospital are those people who are interesting medically, and while I hope each of you is interesting socially, I hope you are never interesting medically. The hospital selects those cases where treatment is not routine. It selects those cases where the challenge of diagnosis and the challenge of treatment are challenges that should be presented only to the best in the profession.

I should like to suggest, therefore, that in place of the typical laboratory school we set up instead a teacher education center in the public schools, or in the private schools which cater to the same groups of children. These should be schools which demonstrate how good elementary education can be, which demonstrate how good secondary education can be, and which demonstrate that it is not the neighborhood that determines the quality of education, but that often it is the quality of education that determines what the neighborhood will be. In these schools, where your teachers are selected but your children are not, you can then develop a program where you give to the school the degree of responsibility for the education of teachers which formerly was reserved for the college itself. In this school there will be teachers who can be treated as though they were members of a college faculty. This is to be the school which helps to educate not only the children and the teachers but also the professors who should know what life in schools today is actually like.

Previously, when I referred to pre-tenure education, I omitted an important area of teaching, that is the continued education of the permanent members of the faculty. I ask you who are interested in professional laboratory experiences, why do you limit all of your attention to those in the pre-service program? Are there not tremendous opportunities for the in-service program that can come, not through the taking of courses alone, but through engaging in the kind of field experiences that you know so well how to organize? Conant, in his *Education of the American Teacher*, referred to giving young teachers a paid leave of absence so that they could return to a college campus instead of taking their courses in the late afternoon and on Saturday. If returning to a campus is so important for a young teacher, how much more important is it for the teacher who has been out of college some ten or fifteen years? Our question is not whether the teachers can afford to take time off; our question is, rather, can we afford not to have them devote their time to higher education? And to further one's education includes not only talking about things but actually doing them.

You can see then why I attach so much importance to professional laboratory experiences because you, who have demonstrated how much students can learn through participation in carefully selected, carefully graduated, and carefully supervised and directed activities, have done so much. For what you have done, I say "thank you." But because so much remains to be done and because I have been given the opportunity to mention those to you, I say a very special "thank you" again.

CHAPTER V

Integrating Theory and Practice in Teacher Education

NED A. FLANDERS

Perhaps the most important people in the United States today are those who guide the development of the future teachers in our country. It is to these individuals that the intellectual examination which follows is directed. These speculations concern themselves with ways to transmute an average college student into a beginning professional teacher. My orientation is toward the future and my focus is on a program of teacher education to prepare a person for a teaching station that might exist 40 years from now or perhaps 50, let us say, near the year 2000. As little space as possible will be devoted to our present efforts to prepare teachers. This is not meant as a critical innuendo about present practices but I do believe that the future will demand improvement.

From time to time those of us who are interested in teacher education gather together to consider the future of teacher preparation. I rather suspect that even at such meetings the exigencies of the back home job are so great that we do not often have the opportunity to look forward. Let us attempt to look forward for a little while.

There is the possibility that you may believe that I am advocating a particular method of teacher training. If this occurs, it will be an error of communication. Somewhere along the line I failed to express myself properly or you did not read accurately or in some combination we failed to communicate. I am not really advocating a particular method of teacher education. I do want to raise questions about inducting young persons into the teaching profession.

If I become overly enthusiastic, please forgive me. This is a most exciting time to be in education. It is a time when additional resources are finally beginning to flow our way. Anyone who has helped to lobby for research funds in the United States Congress appreciates the fact that we began from less than three-quarters of a million dollars for a year in the Cooperative Research Program and we are requesting something like $25 million for the coming budget, to which will be added, in President Johnson's Elementary and Secondary Education Act of 1965, approximately $45 million for Cooperative Research alone; one billion dollars for public school programs, and $100 million for centers to implement new curricula and increase library resource materials. The chances are pretty good that this bill is going to pass.

It is also an exciting time because of the technology we have available to us. Computers can be used not only to analyze data but to engage in interesting and creative research in planning programs for different kinds of learning.

We can now ask important questions. What kind of a teacher will be teaching 40 years from now? What kind of a teacher do we need? What are the skills? What will be his job specifications? What will the teaching station look like sometime in the future? Here are some changes that may come to pass.

First, there will surely be an increased specialization of teaching functions but not along traditional content lines. We may require a specialist in motivating students, a specialist in dealing with mass audiences or large groups, a specialist in the diagnosis and specification of remedial programs for children who are having difficulty. There may be a specialization in training teachers along process lines within traditional content areas. Teachers will be trained to meet particular job specifications with better matching between a person's attributes and requirements of particular process roles.

The following discussion is divided roughly into three parts.

The first part will explain research results which, if replicated and extended by many researchers during the next two decades, and if integrated by the use of common concepts, then these results might constitute a body of knowledge which can be incorporated into the curriculum of teacher education.

The second part will consider how this particular research information, as meager as it may be, might be translated into new sets of objectives for teacher education. Here the emphasis will be on the analysis of overt, spontaneous behavior.

The third part will include some personal observations about the kind of activities that might be associated with objectives of teacher education, such as those described in the second part of my remarks.

To understand the research data that I would like to present, you must understand interaction analysis. Some learn and grasp a concept most easily through the use of analogy. Interaction analysis can be compared with bird watching and predicting which birds live in a particular park area. We go to this park area. We open up our eyes, take out our binoculars and look for different kinds of birds. Ah ha, there is a robin! So we mark that down and record it, and after a known period of time we have recorded all of the things we have seen fly by. When we have accumulated all of our data we are prepared then to make some statement about probabilities. We can say the probability may be 30% that you will see robins if you go into this geographical area in this particular time of the year. We have used the names of different kinds of birds as a set of categories. We count the incidence of these particular events, like a robin flying by. We do this carefully. We create a set of expectations about what you can find on the next visit.

Now walk into a classroom with a set of categories concerning verbal communication. You can note the incidence of various verbal events and you can leave the classroom after a suitable period of time sampling with a set of expectations about the kinds of verbal events that occur in the classroom.

In the park, we could have looked for rabbits rather than birds. But this would require a different set of categories, one suitable for rabbits rather than birds. In the classroom, we could look for non-verbal events, but this too would require a different set of categories.

The kind of categories you use determines what you record when you observe in a classroom. An interest in teacher behavior means you must have categories that are relevant. Later on you may ask me some question like—"Why didn't you measure something else?" One answer is that we were looking for birds and not rabbits.

It is useful to memorize the system of categories. Code numbers designate categories, these code numbers are like your telephone number or address. They are short-cut labels.

CATEGORIES FOR CLASSIFYING VERBAL STATEMENTS IN THE CLASSROOM

A. Categories of teacher talk
   1. responds constructively to feeling or attitude
   2. gives praise or encouragement
   3. acknowledges, reacts to, or makes use of the ideas expressed by students
   4. asks questions
   5. lectures, expresses opinions, facts, etc.
   6. gives directions
   7. gives criticism

B. Categories of student talk
   8. student responds to teacher
   9. student initiates own idea

C. Category for all other events
   10. confusion, silence, pause, etc.

To use these categories an observer sits in the classroom and writes down a category number about once every three seconds. This record is a sample of classroom communication, represented within the limits of the category system.

The same basic design was used in several research projects involving interaction analysis. We enter a population of classrooms, we administer a paper and pencil instrument to measure the pupils' perceptions. The pupils mark "agree" or "disagree" concerning whether they like the situation, whether they think it is important, whether they believe that they are learning, whether they find it easy to work with the teacher. When marks are high, this means that pupil attitudes toward the classroom situations are positive. Low scores mean that perceptions are more negative.

A second criterion of teaching effectiveness is the test score for content objectives such as mathematics, long division, science, or language skills. Here again scores adjusted for initial ability are useful.

By the way, it bothers me when educators say, "We really can't determine the content of our education courses because we can't agree on what good teaching really is." This position becomes ridiculous in a school of education because it implies that the faculty cannot tell the difference between good and poor teaching. We teach as if we can distinguish between good and poor teaching; we claim we do not know when we are asked to justify the content in our course.

One way to study good and poor teaching is to locate classrooms in which the pupil attitudes are superior and the evidence suggests that the pupils are learning more; this is good teaching. In other classrooms we may find below average attitudes and discover that the pupils are not learning very much; this is poor teaching. With good teaching the pupils like it and learn more; with poor teaching, the youngsters are unhappy and do not learn as much. Those are the differences between the classrooms we studied in our research.

In New Zealand we located five classrooms in which scores on pupil attitudes were high and another five classrooms in which these same measures were low. These ten classrooms were the highest and lowest average scores among the 33 classrooms in a representative sample which took the attitude test.

We might now inquire whether there were any differences in the verbal patterns in the contrasted classrooms. To do this we combined all observations in each group of five classrooms so that our observations formed one composite high scoring teacher and one composite low scoring teacher. By this method we tend to minimize differences between classes and teacher personality variables.

The high scoring teachers used categories one, two, and three, mostly praise, encouragement and the clarification of student ideas, three times more frequently compared with the low scoring classes.

The low scoring teachers expressed their opinions freely and gave direction and criticism (but mostly directions) twice as often as the high scoring teachers. Apparently low scoring teachers felt it was necessary to repeat directions, to reinforce these directions and clarify them in those classes in which the pupils were less happy and felt they were learning less.

Students talked about 31% of the time in a high scoring classroom, and 20% in the low scoring classroom. In category ten, there was more confusion in a low scoring classroom.

These data come from a different culture. This was New Zealand, about sixth grade level, where there is more corporal punishment and more formal relationships than exist between the teacher and pupils of our country.

The same research design was carried out in the State of Minnesota using seventh grade English-social studies core classes and eighth grade mathematics classes. In this study, however, a pupil attitude test was used second and a test of content achievement was used first. Thus we were able to identify some high scoring and low scoring classrooms in which we had clear evidence that the pupils were learning more or less and they liked the classroom situation more or less.

The results are essentially the same as we found in New Zealand. Those of you who are interested in the data can find the research results in a Research Monograph of the Cooperative Research Branch published by the U. S. Government Printing Office in the spring of 1965. It is called, *Teacher Influence, Pupil Attitudes and Achievement,* by Ned Flanders.

There are a number of generalizations which can be made from this kind of research. In all cases the comparison is between the composite teacher of classes which score higher on content achievement (adjusted for initial achievement) and on a pupil attitude inventory, on the one hand, and the composite teacher of classrooms in which the same test scores are lower, on the other hand.

First, although it represents less than five per cent of all verbal statements, "good" teachers expressed between five and ten times more statements which fell into category one and two. That is, they make constructive use of pupil feelings and attitudes more often and give more praise and encouragement.

Second, and most important, they react to and make use of ideas expressed by pupils more often in high scoring classrooms.

Third, high scoring teachers ask more questions.

Fourth, they need to give fewer directions and criticize pupils less often.

Fifth, usually (but not always) pupils talk more in the high scoring classrooms. Pupils are more likely to express their own ideas, category nine.

Sixth, teachers in the high scoring classrooms possess what might be called flexibility of teacher influence. That is, they tend to have a wider range of roles or behavior patterns at their finger tips, so to speak. Furthermore, they use these different patterns in particular ways which are different from the teachers in the low scoring classrooms. For example, they are more indirect at first and become more direct later in the cycle of studying material. A teacher is more indirect when he makes more frequent use of categories 1, 2, 3, and 4 compared with 5, 6, and 7. He is more direct when the reverse is true.

These research results have a number of implications for those responsible for the education of teachers. You may not agree with my interpretations, but here they are for what they may be worth.

First, we are beginning to learn that teaching is a performing art which can be studied, analyzed and abstracted as a series of communication transactions. When you have seen an especially fine teaching lesson I think it would be almost inconsiderate not to call it an artistic performance. It is artistic because it combines uniqueness and talent with laws about interaction in the classroom. It is a mixture of that unique talent that the teacher has and more general propositions about teaching and learning. The events that occur during teaching are products of the teacher's talent, the individual and collective nature of the pupils, the nature of the learning task, and momentary relationships generated from spontaneous interaction. No two performances can ever be identical.

Even though teaching is artistic and a particular lesson is unique, teaching patterns have much in common. This apparent conflict may be the result of the concepts which we use in describing teachers and teaching. Choose one set of concepts and the events seem unique, choose another set and interaction patterns have much in common. Concepts which take into account many minute details tend to portray the uniqueness of teaching. Our category system tends to show patterns which can be seen again and again in most classrooms.

A second inference is that growth in teaching competence is a never ending process of personal inquiry that has much in common with scientific, logical inquiry. Personal growth feeds on curiosity, thoughtful analysis, objective information, recognizing both small and large differences and exposure to a never ending variety of problem solving situations. There are elements of initiative and self direction present. It requires an awareness that comes from being open and sensitive to one's environment. My assumption is that these characteristics can be nurtured in most of our teacher candidates. A few candidates will have an exceptionally high talent for inquiry and a few will work very hard and never really develop it. The large majority are ready for training in inquiry which is basic to development as a professional teacher. Perhaps one way to improve teacher preparation is to consider what is required for personal inquiry to take place.

My third comment is an effort to deal with the consequences of the first two influences. If teaching performance is an art which can be studied by analyzing communication, and if teaching competence is developed through personal inquiry, then teacher preparation must consist of a series of investigations in which prospective teachers discover—and I would like to emphasize 'discover'—consistent generalizations about teaching and learning. If we do not permit prospective teachers to practice inquiry and discover principles of teaching, how can they continue to develop when they are on the job? What tools for inquiry do our students have today as a result of participating in our education courses?

Now, this leads to a number of challenges for the teacher educator. The first challenge is that the teacher educator must arrange a sequence of investigations which can be carried out by a person who has had no teaching experience. What is the first inquiry problem that a person with no teaching experience can start and successfully complete? This is the place to start our curriculum. Then if we can build on the results of that first experience, moving toward more complicated and increasingly delicate aspects of teaching, we can then identify a sequence to our curriculum.

The second challenge we have is to provide the tools for collecting information about teaching so that students can inquire, so that they can develop a spirit of inquiry which includes investigating their own behavior. One such tool is interaction analysis. Other tools may be paper-and-pencil instruments that summarize the perceptions of boys and girls.

A third challenge is to help the prospective teacher organize his discoveries by making use of the fewest number of concepts necessary to explain what is being investigated. So often in education courses we draw on concepts of human growth and development, individual differences, learning theory, in fact, the more concepts we can throw at our students based on research, the more erudite we feel. We lose sight of parsimony. What are the fewest number of concepts that are necessary to make decisions in guiding the teaching-learning transactions? Not the most, but the fewest? And then can we teach these to our prospective teachers?

The fourth challenge is to make sure that the concepts taught to prospective teachers obtain their meaning in terms of spontaneous behavior, behavior that each student has experienced himself. For example, education students may be investigating how a teacher encourages a pupil to start talking. It is perfectly obvious a teacher should ask questions and the minute that education students try to do this they learn that all questions do not elicit the expected responses. To investigate this problem they must develop a classification system for different kinds of questions in order to find out why one question is appropriate and another is not. This kind of investigation teaches them to analyze questions and pupil responses and may also let them practice asking questions in spontaneous interaction. Such learning may provide a personal understanding of a concept that is based on overt behavior.

What would a set of objectives for teacher education look like if emphasis were given to spontaneous behavior? I would like to suggest a few objectives.

The purpose of teacher education is to start with the average college student and then produce a beginning teacher who attains the following objectives at some minimal level. First, we want to produce a beginning teacher who has *discovered* what he knows. Because he discovered what he knows using procedures that go beyond listening and reading, he is better prepared to continue his inquiry after he gets on the job.

Second, we want to produce a beginning teacher who can identify and label various patterns of teaching behavior which are commonly found in the classroom and is prepared to investigate less common patterns by the same skills and techniques.

Third, we want to produce a beginning teacher who can perform these behavior patterns at appropriate moments in spontaneous situations and can make adjustments which take into account the age level and other characteristics of pupils, as well as the objectives of that particular teaching situation. But notice we are saying "who can perform these behavior patterns in spontaneous situations."

Fourth, we want to produce a beginning teacher who can predict the consequences of providing particular teaching patterns under specified conditions and can use this knowledge to plan the control of his own behavior given particular objectives and purposes in the teaching situation.

Fifth, we want to produce a beginning teacher who can accept this need to control his own behavior for professional purposes, and has practiced controlling his own behavior in increasingly complex, spontaneous situations.

Sixth, we want a beginning teacher who can collect information about his own behavior using appropriate tools, who can organize this information into pedagogically useful concepts, and has had practice with these concepts in making use of feedback from others about his own behavior.

Seventh, we want a beginning teacher who has begun to form a system of values concerning what kind of teaching behavior best matches his own professional purposes and can justify his opinions by reference to information that he has helped to collect.

Now we turn to part three of my comments. Here we consider the possibility that teaching follows laws of behavior. We wish to consider activities that will form a curriculum oriented toward the overt behavior of teachers.

Consider first, that teachers must obtain control of their spontaneous behavior while teaching. This includes the ability to ask different kinds of questions and to know why a particular kind of question is asked, the ability to clarify and summarize ideas expressed by another person, the ability to use clarification and summarization as a guide to group discussion, or to move from one phase of a discussion to another, or from one problem solving process to another.

What about praise? We need to know a lot more about praise. Is it as useful as we think, or does it interfere with the learning process?

We need to learn how to clarify and make use of emotional, affective aspects of a pupil reaction, both negative and positive. Can a teacher use emotional expressions to motivate pupils in a constructive way? We must create situations in which education students can practice these skills.

The work of Professors Robert Bush and Dwight Allen at Stanford University is an interesting experiment in teacher education. They work with interns who have completed their Bachelor or Arts degree. They work in front of a television camera to—"See if you can capture the interest of a student for five minutes." The education student tries. The entire performance is replayed immediately by using a magnetic video tape recorder. This is their first experience with professional education. Typically students react the way you did when you first heard your voice on a tape recorder. Students often develop a—"It can't be me" —kind of feeling. Suppose the student says, "My hands were terrible." "All right, let's do it again with another pupil, but watch your hands this time" and so the beginning teacher tries again. "Remember, you wanted to look at your hands," says the counselor, as they replay the second session. Usually the second effort seems more successful, but the entire sequence is repeated a third time in an effort to make additional improvements. This equipment is used many times during the first three or four weeks, with gradually more complex teaching goals. Students start with one pupil, then move on to several. First the assignment is to arouse interest, then to teach a concept. Each magnetic video recording is played back and analyzed in an effort to identify principles of teaching behavior. These students are discovering rules about behavior that are relevant to teaching.

In conclusion, it occurs to me that the title of this paper may have been poorly worded. In the original plan, the title was "Building a

Bridge Between Theory and Practice." A better title may have been "Building Theory Out of Practice" or perhaps "Eliminating the Dichotomy of Theory and Practice in the Field of Education."

It now seems certain that we will obtain convincing information from more sophisticated research projects which will provide us with a content for the preparation of teachers. Let us hope the profession remains open-minded, ready to receive new knowledge and incorporate it in our teacher preparation programs.. The improvement of teacher education programs may eliminate the dichotomy between theory and practice. Should this occur, it seems to me that we will conceptualize the process of teaching differently. Professors of education may learn to relate to education students differently. Right now it is our unforunate duty to provide them with information which they presumably need to know about teaching. We provide them with knowledge of individual differences, patterns of human growth and development, theories of learning, all without any assurance whatsoever that this knowledge is essential to teaching. We do all this enthusiastically. But we seldom place our students in situations where they can inquire, where they can see themselves in their present situation, make a diagnosis, try out a plan of action, receive feedback information, and then try again. We seldom ask our students to conceptualize a problem. By the way, with regard to these weaknesses, we can join hands with our colleagues in science, literature, and the arts and go to confession together. It is just as easy to turn a freshman chemistry course into a mundane "cookbook experience" as it is to turn an education course into non-directive vagaries. Neither situation is very good for practicing inquiry.

It is encouraging to speculate about the future with others interested in teacher education. What will teacher education be like ten, twenty years from now? I think it is going to be an investigation, an exciting, interesting investigation of teaching behavior. It is going to be the analysis of what takes place when a person starts to teach. It is going to involve practice in abstracting behavior by using a few important concepts. It is going to be learning how to use systems of observations, such as interaction analysis, which can be used to interpret patterns of behavior. If we are very skillful, teacher education will become an inquiry process in which future teachers learn through their own discovery.

Part Two

Recent Research, Implications, and Priorities

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CHAPTER VI

Interaction Analysis and Its Application to Student Teaching

EDMUND AMIDON

All of the research studies reported in the following section utilized the system of Interaction Analysis which was developed by Ned Flanders and his associates at the University of Minnesota. The research studies reported here were conducted by Edmund Amidon, Norma Furst, and Anita Simon of Temple University; John B. Hough of the Ohio State University; Jeffery Kirk of Lehigh University; and Richard Zahn of Glassboro State College.

The Flanders System of Interaction Analysis is an observational procedure which can be used to classify the verbal behavior of teachers and pupils. Using this system, verbal behavior in the classroom is classified into ten category designations. There are seven categories for teacher behavior, four of which are classified as indirect influence. They are: 1) accepting pupil feeling, 2) praising or encouraging, 3) accepting pupil ideas, 4) asking questions. There are three categories of direct teacher influence, which are: 5) giving information or opinion, 6) giving directions and 7) criticizing. Two categories of pupil talk are used in the system: 8) pupil response to the teacher and 9) pupil initiated talk. Category 10 is used to indicate silence and confusion. These categories are summarized on the following page.

After a lesson has been categorized by a trained observer, the data collected by the observer must be summarized so that it can be interpreted. This is done by entering the category numbers in the form of tallies into a 10-row by 10-column table called a matrix. The completed matrix gives the observer a picture not only of the percentage of interactions falling in each category but also of the general sequence of responses. Although an exact representation of the sequential time element of the entire lesson is not shown, recording the numbers in the matrix in an overlapping fashion preserves the sequential time element of adjacent numbers. Thus, the researcher might note that praise followed student response about 10% of the total lesson time and yet be unable to extract from the matrix whether the praise occurred during the first or last fifteen minutes of the particular lesson. For specific information about sequence the observer relies on his raw data which was initially recorded in a column. The following example is offered to help in clarifying the use of the matrix.

Categories for Interaction Analysis

Minnesota, 1959

TEACHER TALK	INDIRECT INFLUENCE	1.* ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a non-threatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.
		2.* PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying "um hm? or "go on" are included.
		3.* ACCEPTS OR USES IDEAS OF STUDENT: clarifying, building, or developing ideas suggested by a student. As teacher brings more of his own ideas into play, shift to category five.
		4.* ASK QUESTIONS: asking a question about content or procedure with the intent that a student answer.
	DIRECT INFLUENCE	5.* LECTURING: giving facts or opinions about content or procedure; expressing his own ideas, asking rhetorical questions.
		6.* GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply.
		7.* CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
STUDENT TALK		8.* STUDENT TALK–RESPONSE: talk by students in response to teacher. Teacher initiates the contact or solicits student statement.
		9.* STUDENT TALK–INITIATION: talk by students which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.
		10.* SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

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*There is NO scale implied by these numbers. Each number is classificatory, it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.

Suppose that after the observer enters the classroom the following sequence of events takes place. The teacher starts by saying, "Boys and girls, sit down in your seats and take out your workbooks." (category 6). Bill, one of the brighter children, responds to this by saying, "But, Mrs. Adams, I thought you said we were going to have a story this morning." (category 9). The teacher then reacts to Bill by saying, "Bill, you know that you were so noisy today that I decided to punish you by making you work in your workbooks. I don't like it when you forget these things, Bill." (category 7). (The observer records two 7's in a row because of the length of the statement.) The teacher continues, "Now I think we can forget about the story and get to work in the workbooks. If we do a good job then we will have the story tomorrow." (The first part of the statement is a 6 and the last part, a 5.) The observer has recorded the following column of numbers, pairing them as shown below:

6
(
9
)
7
(
7
)
6
(
5

These numbers are then entered into a matrix in sequence pairs in such a way that each number is entered twice, once as the first and once as the second number in each pair. The rows of the matrix represent the first number in the pair and the columns, the second. For example, the first sequence pair, 6-9, would be tallied in the cell that is located at the intersection of row 6 and column 9. The next pair is entered in cell 9-7, the cell at the intersection of row 9 and column 7; the third pair 7-7, into the cell located at the intersection of row 7 and column 7; etc. Figure I (page 74) shows the actual location of these five tallies in the matrix.

Interaction Analysis was developed and refined by Flanders in the early 1950's. The early research on Interaction Analysis was designed to relate children's attitudes to patterns of teacher behavior. Flanders found that pupils of teachers who were observed to be indirect had more positive attitudes than pupils of teachers who were perceived by observers as being direct. These findings indicated that pupils of indirect teachers were more interested in subject matter and liked the methods used by their teachers better than students of direct teachers (6, 8).

The results of this early research support the validity of Interaction Analysis as a procedure for predicting the general attitudes of children in a particular classroom.

SECOND EVENT

First event	1	2	3	4	5	6	7	8	9	10	Tot.
1											
2											
3											
4											
5											
6					1				1		2
7						1	1				2
8											
9							1				1
10											
Tot.					1	1	2		1		

FIGURE I

SAMPLE MATRIX

The next research effort undertaken by Flanders and his associates was designed to determine the relationship between teacher behavior and student achievement. Several large studies were conducted both in a controlled laboratory setting and in normal classroom situations. All of these studies were carried out at the junior high school level and involved the teaching of social studies and mathematics.

In the first of these studies, Amidon and Flanders (2) found that dependent-prone eighth grade students who were taught geometry by indirect teaching methods learned more than dependent-prone children taught by direct teaching methods.

J. P. Anderson (5) made a significant contribution to the validation of Interaction Analysis when he found that observers using the system perceived teacher influence in essentially the same way as did the teachers' pupils.

In a large scale study, Flanders (6) isolated, for purposes of analysis junior high school teachers whose pupils learned the most and the least after a two-week experimental program in social studies or mathematics. Teachers of the higher achieving classes were found to differ from teachers of the lower achieving classes in the following ways: 1) they used five to six times as much acceptance of student ideas and encouragement of student ideas, 2) they used five to six times less direction and criticism of student behavior, 3) they talked ten per cent less, 4) they encouraged two to three times as much student initiated talk.

Similar results to those found by Flanders between teachers of high achieving pupils and those of low achieving pupils were found by Amidon and Giammatteo (3) when they compared thirty superior teachers with 150 randomly selected teachers in elementary schools. The thirty superior teachers were nominated by their supevisors and administrators.

Since all of this research appeared to have implications for teacher education, Flanders (7) instituted an inservice program in which Interaction Analysis was taught as an observational tool. The inservice program was able to effect observable changes in teacher patterns of verbal behavior. In general, at the end of the experimental in-service program, these teachers evidenced more encouraging and accepting behavior and were less critical and more indirect than they had been at the bginning of the experiment.

The remainder of this chapter describes research in which Interaction Analysis was used in pre-service teacher education programs with elementary and secondary student teachers.

The first research to be reported was done by Hough and Amidon (9) on the relationship of personality structure and training in Interaction Analysis to attitude change during student teaching. This research was done with secondary school student teachers. The second study reported was done by Kirk (12) on the effects of training in Interaction Analysis on the behavior of student teachers in elementary schools. The third study was conducted by Furst on the effects of training in Interaction Analysis on the behavior of student teachers in secondary schools. In the fourth study, Zahn investigated the effects that training in Interaction Analysis had upon the attitudes of student teachers. This study was conducted with elementary student teachers. The last section of this chapter presents some implications for teacher education of the research on Interaction Analysis.

THE RELATIONSHIP OF PERSONALITY STRUCTURE AND TRAINING IN INTERACTION ANALYSIS TO ATTITUDE CHANGE DURING STUDENT TEACHING

Hough and Amidon hypothesized that the attitudes that student teachers develop toward teaching are in part a function of 1) the way they view the teaching situation as being friendly or threatening, 2) the openness of their personality structure, and 3) the extent to which their teaching behavior is reinforced during student teaching.

Hough and Amidon used the Rokeach Dogmatism Scale to measure the openness of a teacher's belief system. Rokeach (13) compares the open and closed persons in the following way:

"The closed person sees the world as being relatively threatening. The open person sees the world as being relatively friendly. The closed person judges ideas in terms of the authority of the source of the ideas and the extent to which the ideas correspond to his own beliefs. The open person tends to judge ideas on their own intrinsic merit."

Student teaching may represent a bewildering situation which may present a constant challenge and potential threat to the student teacher as he seeks to develop an appropriate pattern of teaching behavior. As he interacts with students, his own value system may distort his perceptions and thus may blur the meaning of the data which he receives. On the other hand, even if he is relatively open he may not have the knowledge necessary to interpret his own or the pupils' classroom behavior. The results may be the same whether the student teacher's perceptions of the pupils are distorted or whether he lacks the skill to react appropriately in the classroom. In any case, his inappropriate behavior may become the cause of pupil behavior which he is incapable of perceiving accurately and, therefore, is unable to use constructively.

Hough and Amidon predicted that the learning of Interaction Analysis would provide a structure for the student teacher which would enable him to assess his classroom teaching more objectively. They also predicted that the behavioral skill training that is concommitant with learning Interaction Analysis would give the teacher the skills necessary to implement his understanding of teaching behavior.

Hough and Amidon tested their hypothesis by comparing the attitudes of two groups of twenty student teachers. One of these groups of student teachers was taught Interaction Analysis concurrently with student teaching. The second group participated in a traditionally conducted seminar. At the beginning of the semester, both groups were pre-tested on the Dogmatism Scale and the Teaching Situation Reaction Test. Both groups were again tested on the Teaching Situation Reaction Test at the end of their student teaching experience.

The Teaching Situation Reaction Test is designed to measure attitudes that the teacher has toward teaching. Low scores on the test indicate that the person prefers teaching behavior which is more indirect than direct (e.g., accepting, empathizing, and encouraging the students). High scores on the test indicate that the person prefers teaching behavior which is direct (e.g., giving directions, criticizing, giving opinion). The form of the Teaching Situation Reaction Test used in this study was the original 36 item instrument (10, 11). The openness of the student teachers' belief system was measured by the Dogmatism Scale.

Data gathered about the nature of the student teaching experience indicate that the student teachers in the two groups taught in similar types of schools, had the same group of university supervisors, and did their teaching in the same subject matter areas. The student teachers in the two groups did not differ significantly on the Dogmatism Scale or in their attitudes as measured by the Teaching Situation Reaction Test at the beginning of the student teaching experience. However, the student teachers who were taught Interaction Analysis showed significant pre- to post-test change in a positive direction on the Teaching Situation Reaction Test. Those student teachers who were not taught Interaction Analysis did not change significantly. However, there was a slight trend which indicated that this group actually became more negative during student teaching. The greatest change in scores on the Teaching Situation Reaction Test was made by those student teachers in the Interaction Analysis group who scored in the lower third of the range on the Dogmatism Scale. These were teachers with a relatively open belief system. A comparison of TSRT change scores for those student teachers in the two groups who scored in the lower third of the range on The Dogmatism Scale indicates that their attitudes toward teaching differed significantly. A similar comparison of student teachers in the two groups who scored in the middle and upper third of the range on the Dogmatism Scale showed no significant differences. It seems apparent, therefore, that significant pre- to post-TSRT change scores in the Interaction Analysis group are related to both training in Interaction Analysis and to the openness of these student teachers' belief system.

The results of this comparison data show that low dogmatic student teachers in the Interaction Analysis group changed significantly more in a positive direction on the Teaching Situation Reaction Test than student teachers in the middle and upper third of the range on the Dogmatism Scale. A similar analysis performed on the Non-interaction Analysis group showed that the Teaching Situation Reaction Test change scores for the low dogmatic student teachers in that group did not differ significantly from more dogmatic student teachers in the group.

Hough and Amidon report that the data they collected support their hypothesis. Student teachers with relatively open belief systems, who learned Interaction Analysis, showed significantly greater change in attitudes toward the use of indirect, (e.g., emphatic, accepting and encouraging) teacher behavior than either equally open student teachers who had not learned Interaction Analysis, or relatively more closed students who had learned Interaction Analysis.

EFFECTS OF TRAINING IN INTERACTION ANALYSIS ON THE BEHAVIOR OF STUDENT TEACHERS IN ELEMENTARY SCHOOLS

The second study, which was conducted by Kirk (12), had three purposes: (1) to determine whether interaction analysis data could be used to discover teaching patterns common to student teachers of elementary intermediate grades, (2) to determine whether knowledge of Interaction Analysis would lead student teachers to alter their teaching behavior, and (3) to determine whether elementary pupils could detect any changes in the teaching patterns of their student teachers.

Fifteen Temple University student teachers were selected as an experimental group and taught Interaction Analysis. A control group of fifteen other student teachers, comparable in age, professional experience, measured basic personality, and attitude toward teaching, were allowed to proceed, as a control group, through their second eight-week student teaching placement without having any contact with Interaction Analysis. Measures used were the *Minnesota Teacher Attitude Inventory*, the *Runner Studies of Attitude Inventory*, Interview Form II, the *Teaching Situation Reaction Test* (10), a form of the *Student Perception of Teacher Influence Inventory* (5), and the Flanders Interaction Analysis System (1, 6). All 30 student teachers, on the average, were observed by trained observers for two 21-minute open-discussion social studies classes at the beginning of their placement and then again for similar periods at the end of their experience.

The experimental group received approximately five hours of training in Interaction Analysis spread over a seven-week period. Six individual conferences were held immediately after weekly visits by the college supervisor, and focused on the tally sheet of the lesson just observed. The experimental group in no way became "experts" in Interaction Analysis; they understood its basic procedures and some of the previous research. They could categorize with fair reliability. Prescriptive statements were not directed at them. They knew that their grade in student teaching was in no way contingent upon interaction patterns shown in their individual teaching.

Results of the study indicated that there was a relationship between the learning fundamentals of Interaction Analysis by student teachers and subsequent changes in their teaching behavior. Becoming more aware of communication patterns and observing several interaction records of their own teaching seemed to relate to the following behavioral changes: The *student teachers* in the experimental group, when compared with those in the control group at the end of student teaching experience: (1) talked less, (2) resisted to a greater degree the tendency to become more direct at the end of student teaching than they were at the beginning, (3) gave fewer directions, and (4) asked more questions in immediate response to their pupils' voluntary contributions. The *pupils* in the experimental classes, when compared with those in the control classes: (1) talked more, (2) talked more spontaneously, (3) talked at greater length per contribution, and (4) interjected their own ideas into the discussions more freely.

Inventories showed that the pupils in the experimental classes felt that during the student teaching experience their student teachers had become more indirect and had decreased the amount of teacher-talk in class, whereas the pupils in the control group classrooms did not perceive these two changes in their student teachers' behavior.

There were no significant differences found between the groups in regard to: 1) the TSRT and the MTAI scores, and 2) the amount of student teacher lecture time, praise, criticism, and acceptance or use of pupils' ideas and feelings.

The general question as to whether learning the fundamentals of Interaction Analysis helped the experimental student teachers become more indirect in their teaching may be considered by analyzing the I/D-ratios (indirect/direct) of the student learners in the two groups.

The four I/D-ratios computed are: (a) the "I/D-Ratio," showing the overall use by the student teacher of indirect statements as compared to direct statements—Flanders categories 1 + 2 + 3 + 4 divided by categories 5 + 6 + 7; (b) the "Revised I/D" emphasizing the motivating and control statements—categories 1 + 2 + 3 divided by categories 6 + 7; (c) the "8-9 I/D" which indicate the extent to which the student teacher is indirect or direct in response to pupil participation; and (d) the "Extended I/D" which contrasts the student teachers' extensive (the statement took longer than three seconds) use of praise and their acceptance of pupils' ideas as against their extensive direction-giving and criticizing.

The student teachers in the experimental group in Kirk's study tended, as they grew more experienced as teachers and more familiar with their classes, to become more direct in their general use of language and in their responses to their pupils. At the end of the student teaching experience they asked fewer questions, lectured more, and accepted their pupils' ideas less than they had at the beginning of their student teaching. On the other hand, they tended to become more indirect in their attempts to motivate and control their pupils; they gave fewer directions and criticism while giving, proportionately, more praise and criticism. Their use of encouragement increased as their use of restrictive statements decreased. In some ways, therefore, these student teachers became more direct, in other ways more indirect.

Several general conclusions seem to be justified from this study and substantiated by additional data reported in Kirk. Although student teachers stress the cognitive aspects of intermediate social studies discussions as they gain experience and familiarity with their pupils, and although pupil participation tends to increase during the first two months, those student teachers who possess knowledge of Interaction Analysis do not dominate the classroom conversation as much as do student teachers not trained in Interaction Analysis. Second, although student teachers seem naturally to tend to increase their use of indirect verbal behavior when they are taught the rudiments of Interaction Analysis, a significant increase in their use of the indirect verbal behavior seems to be an unsolicited result. If such accelerated increment in "indirectness" is indeed associated with increased academic achievement and social health, then it may well be that intensive study of Interaction Analysis by student teachers, before or during their actual student teaching, might improve the condition of teacher education.

THE EFFECTS OF TRAINING IN INTERACTION ANALYSIS ON THE BEHAVIOR OF STUDENT TEACHERS IN SECONDARY SCHOOLS

The next study, conducted by Furst, was designed to observe the classroom behavior of student teachers by a trained observer using an observational tool. The verbal teaching behavior of student teachers who had been trained in the use of Flanders Interaction Analysis was compared with the verbal teaching behavior of student teachers who had been more conventionally trained.

Furst's study was further designed to gather data to help make an administrative decision as to the best time to schedule the experimental course during pre-service education. Hough and Amidon had scheduled their experimental sections concurrently with student teaching. However, due to University scheduling problems, many students had later elected to take the experimental course, "The Teaching-Learning Process," sometime during the several semesters which intervened between their first and final student teaching experiences. The two instructors handling the laboratory sections of the course during which the bulk of the Interaction Analysis was taught could offer nothing more than "hunches" as to which group seemed to be benefitting the most from the treatment. It seemed easier to interest the students who were faced daily with actual teaching problems than those who were relying on their memories of problems a year old. The non-student teaching groups had to rely more on observations of other teachers and simulated teaching experiences for analysis. The student teachers, on the other hand, could tape their actual classes and study their verbal teaching behavior. However, there were no actual data to support any one time sequence over another.

This study was also undertaken to gather information as to the feasibility of working with a new system for classifying verbal interaction in the classroom—the Verbal Interaction Category System (VICS).

In summary, this study was undertaken for three reasons:

1. to gather actual behavioral data along with pencil and paper attitude scores to show whether or not there are significant differences in student teachers trained in Interaction Analysis and those not so trained.
2. to gather evidence to help decide if the timing of instruction in Interaction Analysis makes a significant difference in the behavior and/or attitudes of student teachers.

3. to gather evidence as to the usability of VICS.

All English and social studies student teachers enrolled in the Secondary Education Department of Temple University for the spring semester, 1964, were grouped by the following criteria:

Experimental groups:

Group A: had taken the experimental course which included Interaction Analysis *before* their final student teaching experience.

Group B: were taking the experimental course *at the same time* that they were doing student teaching.

Control group:

Group C: had not taken the experimental course nor were presently enrolled in it. (These students had either taken the conventional learning theory course or were Liberal Arts students completing certification requirements through the Secondary Education Department and had taken all the same courses as had the other two groups of students with the exception of either the conventional or experimental course in the Teacher-Learning Process.

All student teachers have achieved a minimum cumulative point hour ratio of 2.0 with a minimum of 2.5 in their subject matter field. Each group contained approximately thirty to thirty-five students.

To make up the sample, ten students were chosen at random from each group. All students chosen were teaching average ability groups and none were in schools considered "extreme" from a socio-economic point of view.

It should be noted that none of the student teachers who had been or were being trained in Interaction Analysis were required or even necessarily encouraged by their college supervisors to use the technique. At this time, the experimental course was being treated as a separate entity.

Since Hough and Amidon had shown evidence that a student teacher's "openness or closedness" (as measured by the Rokeach Dogmatism Scale) seemed to be a significant factor in attitude formation and change, all subjects were given a Rokeach Dogmatism test, and the three groups were found not to differ significantly at the beginning of the experiment.

During the month of May, 1964, all the student teachers were observed in their classroom for a full period by an observer trained in the VICS. Like the Flanders' Interaction Analysis System, the VICS is used to analyze verbal behavior in the classroom. Some differences between the Flanders' system and the VICS are discussed by Amidon and Hunter (4).

> Perhaps the primary differences between the Flanders System and the system here discussed is that the dimension of teaching behavior pointed up in the Flanders System is directness as opposed to indirectness. Does

> the teacher use more direct or indirect influence in his teaching? Although the point is made that no goals are implied, there is argument about whether direct or indirect behavior is more desirable. Direct teacher influence as opposed to indirect is not a dimension of the VICS. The teacher categories are looked at rather in terms of initiation and response.
>
> The Flanders System does not provide a method for differentiating the type of teacher question. There is only one category—the category 4 —"asks questions." The VICS, on the other hand, allows for the division of teacher questions into those which bring forth predictable responses and those which elicit unpredictable responses. In other words, the VICS allows teacher questions to be categorized into those which are broad and those which are narrow in scope.
>
> A third difference between these two systems is in the area of pupil talk. The VICS includes five categories for pupil talk, and distinguishes between that conversation which a pupil has with the teacher and that which he has with another pupil. Both systems indicate whether or not the pupil's talk with the teacher is initiatory or responsive, but the VICS adds the dimension of predictable or unpredictable response.
>
> The Flanders System has one category to indicate silence or confusion, while the VICS separates these two . . .
>
> A fifth difference between the two systems is the manner in which teacher response to pupil behavior is noted. The Flanders System has three categories for reacting positively to pupils, but only one for reacting negatively. The VICS has three categories for each; accepting or rejecting pupils' *ideas*, *behavior*, or *feeling* . . .

The Teaching Situation Reaction Test (TSRT), described earlier, was used to measure the student teachers' teaching attitudes both at the beginning and at the end of the experiment.

The "My Classroom Questionnaire" which gives the student teachers a chance to describe their own roles, was designed for this study to parallel the VICS categories and to assess how "aware" the student teacher was of his verbal behavior.

The experimental groups were compared with the control group to determine differences in the way student teachers in the groups differed in attitudes, perceptions of their own role, and verbal teaching patterns.

The experimental groups achieved more positive attitudes toward the teaching situation than did the group not taught Interaction Analysis. It was also found that the experimental group which had the most positive attitudes was the group trained in Interaction Analysis *while* student teaching. However, the group which seemed to evidence the greatest amount of self-awareness was the group which had training in Interaction Analysis *before* student teaching.

The student teachers in the Interaction Analysis groups used more teacher acceptance of students' ideas and more total teacher accepting behavior, and fewer statements which rejected student behavior than the group which did not learn Interaction Analysis. Pupils in the classes

A COMPARISON OF THE FLANDERS SYSTEM OF INTERACTION ANALYSIS AND THE VERBAL INTERACTION CATEGORY SYSTEM (VICS)

VICS

Teacher Initiated Talk:

1. Presents Information or Opinion
2. Gives Direction
3. Asks predictable response question
4. Asks unpredictable response question

Teacher Response:

5. Accepts a) ideas, b) behavior, c) feeling
6. Rejects a) ideas, b) behavior, c) feeling

Pupil Response:

7. Responds to teacher
    a) predictably
    b) unpredictably
8. Responds to another pupil

Pupil Initiated Talk:

9. Initiates talk to teacher
10. Initiates talk to another pupil

Other:

11. Silence

Z. Confusion (Z may be used alone when confusion drowns out verbal behavior or may be used alongside another category to indicate interfering disruption while someone is talking)

(Numbers may be placed to the right of and slightly above the category numbers to indicate change in pupils who are participating)

Flanders System

Teacher Talk:

Indirect Influence

1. *Accepts Feeling
2. Praises or Encourages
3. Accepts or Uses Ideas of Student
4. Asks Questions

Direct Influence

5. Lecturing
6. Giving Directions
7. Criticizing or Justifying Authority

Student Talk:

8. Student-talk Response
9. Student-talk Initiation

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10. Silence or Confusion

*There is NO scale implied by these numbers. Each number is classificatory it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.

of the student teachers in the experimental groups did significantly more talking than the pupils of student teachers in the control group.

There was also more silence in the classrooms of student teachers in the control group, but no difference between the two Interaction Analysis groups on the amount of silence. However, there was no difference among the groups in the amount of confusion in the classrooms.

In summary, student teachers taught Interaction Analysis do differ significantly from those not taught Interaction Analysis in their use of *more* total teacher acceptance of student ideas and their use of *less* teacher rejection of student behavior. Students trained in Flanders System of Interaction Analysis tend to use *more* accepting behavior which lasts longer than three seconds and *more* total questioning.

The timing of the training in Interaction Analysis seems to have *no* effect on these differences in teaching behavior.

Student teachers trained in Interaction Analysis *during* student teaching have *more* total student talk and *more* pupil response talk than those student teachers who are trained *before* student teaching and those not so trained at all.

Student teachers trained in Interaction Analysis show significant evidence of *more* positive change scores on an attitude inventory of Teaching Situation Reactions than those not so trained. In this case, the student teachers trained *while* student teaching show more significant positive changes than those trained either before student teaching or not so trained at all.

THE EFFECT UPON STUDENT TEACHERS' ATTITUDES OF TRAINING IN INTERACTION ANALYSIS AND THE ATTITUDES OF COOPERATING TEACHERS

One of the major purposes of the study reported in this section was to determine the effect of instruction and supervision by the college supervisor using the Flanders System of Interaction Analysis upon the attitude held toward teaching by student teachers. A second major purpose was to determine the relationship between the change in attitudes of student teachers during student teaching and the attitudes of their cooperating teachers.

In attempting to achieve the purposes of this study, Zahn hypothesized that the effect of the cooperating teacher upon teaching attitudes would be greaer upon students experiencing conventional instruction and supervision by the college supervisor than upon student teachers experiencing instruction and supervision using Interaction Analysis. It was also assumed that change in student teacher attitudes would be limited by the strength of the student teacher's belief system as measured by the *Dogmatism Scale.* It was further hypothesized that student teachers experiencing instruction and supervision in Interaction Analysis would have more positive attitudes toward teaching at the end of the student teaching experience regardless of the attitude toward teaching held by the cooperating teacher.

This study involved 92 students majoring in elementary education undergoing their initial student teaching experience during their junior year at Glassboro State College, New Jersey. Four groups of 23 students each were involved. Groups A and B underwent conventional instruction and supervision. Group C also underwent conventional instruction and supervision by the investigator of this study. The experimental group D underwent instruction and supervision using Interaction Analysis by the investigator.

All 92 subjects were given the *Dogmatism Scale* and the *Teaching Situation Reaction Test* (TSRT) prior to instruction and supervision in their student teaching assignments. Their cooperating teachers were also given the TSRT during initial stages of the student teacher's assignment to the classroom. Upon return from the student teaching assignments all subjects again completed the TSRT.

Prior to commencing the student teaching experience the experimental group received 15 hours of instruction in Interaction Analysis during which time the students were taught to build matrices and interpret them. They also discussed the research related to Interaction Analysis. These student teachers were supervised by the investigator who served as observer and furnished the student teacher with the raw data to construct his matrix. The post-teaching conferences focused upon analysis of data available from the tallies and matrix. Emphasis was upon the student arriving at his own conclusions concerning the effectiveness of the lessons taught.

The control groups were given the usual instruction prior to commencing the classroom student teaching experience. This consisted of lectures and discussion in maintaining discipline, lesson and unit planning, teaching of reading, etc., and discussions concerning individual problems and concerns. They were supervised by the college supervisor, who would meet with the student following the lesson taught and indicate strengths and areas of improvement needed. He commonly indicated to the student his evaluation of the quality of the lesson—poor, fair, good, etc.

The data obtained were then analyzed statistically. When the TSRT pre-tests and the *Dogmatism Scale* scores for all student teachers were compared, differences between means were insignificant. This was also the case when the cooperating teachers' TSRT scores were compared with the student teachers' TSRT pre-test scores. Thus it was noted that no significant differences between groups existed.

An examination of post-student teaching TSRT scores held by student teachers compared with their cooperating teachers' TSRT scores indicated a significant difference existing only for the Interaction Analysis group D.

When direction of change on the TSRT from pre- to post-tests for the various groups was studied, it was found that groups A and B tended to become more negative. Combined groups A, D, and C did not change significantly, Group C tended to become more positive, while group D became significantly more positive.

Students whose pre-student teaching TSRT scores were more positive than those of their cooperating teachers, and whose TSRT scores became more positive and thus less like their cooperating teachers' TSRT scores were compared with students whose initial TSRT scores were more positive than those of their cooperating teachers but whose final TSRT scores were similar to their cooperating teachers' scores. On this analysis significant positive change did occur in the Interaction Analysis group, but not in any of the other groups.

When the post-TSRT scores for the various groups were compared, it was found that while both groups C and D experienced a positive change in teaching attitudes, group D, the Interaction Analysis group, experienced a significantly greater positive change than did group C. In testing the direction of change occurring, it was found when student teachers in group D were compared with student teachers in combined groups A, B, and C that significantly more positive changes were noted for group D.

It appears that two influences existed: 1) the investigator and 2) instruction and supervision in Interaction Analysis. It seems that the two interacted to produce significant differences in the group experiencing instruction and supervision in Interaction Analysis.

It was hypothesized that positive attitude changes in student teachers would be related to instruction and supervision in Interaction Analysis, but would not be affected by the openness of the student teachers' belief systems. There were significant results in support of this hypothesis for those student teachers scoring above the mean on the *Dogmatism Scale*. A high score on this test indicates a dogmatic belief system.

Student teachers experiencing instruction and supervision in Interaction Analysis had significantly more positive post-teaching attitudes than did their cooperating teachers. They also had more positive attitudes at the end of student teaching than did student teachers undergoing conventional instruction and supervision. Thus it appears that instruction and supervision in Interaction Analysis was clearly related to a positive change in teaching attitude and did, to a degree, either support the effect of a positive cooperating teacher attitude or reduce the effect of a negative cooperating teacher attitude. Also 19 of the 23 students in group D changed their teaching attitudes in a positive direction, while in all other groups combined only 36 of the 69 students became more positive.

A SURVEY OF THE USE OF INTERACTION ANALYSIS IN TEACHER EDUCATION

In an attempt to determine the extent to which Interaction Analysis has been used in teacher education, Amidon and Simon sent out over four hundred questionnaires during the past year. The questionnaires were sent to professional educators who might be expected to have some knowledge of Interaction Analysis.

Approximately 186 questionnaires were returned. Of those, 85 had not heard of Interaction Analysis or were not familiar enough with the system to answer the questions. 101 of the questionnaires were returned with some additional information on them.

Interaction Analysis is being or has been used in teacher education programs at Glassboro State College, N. J., University of Wisconsin, Milwaukee, Ohio State University, University of Illinois, Syracuse University, Temple University, and several universities and colleges in Oregon. Interaction Analysis has also been used at several other institutions in graduate and undergraduate courses and on a limited scale in intern and student teaching programs. The institutions just mentioned represent at best a partial list. It seems that the impact of Interaction Analysis on graduate and undergraduate students, college professors, and public school teachers has begun to be felt.

The questionnaires asked respondents to discuss the strengths and limitations of Interaction Analysis. A summary of these follows:

The reports of limitations appear to fall into three major classifications: 1) those which are concerned with the training of observers, 2) those concerned with the nature of the categories and the matrix, and 3) those which are related to reactions which teachers, student teachers, and interns have to the system.

A few who responded to the questionnaire said that Interaction Analysis was difficult for them to learn. On the other hand, four people felt that the system was too simple, and that although it was easy to use, it was not sophisticated enough or conceptually complex enough to provide the information necessary for a useful analysis of teaching.

The second major group of limitations is concerned with the categories themselves. One criticism expressed by about ten respondents was that there were not enough pupil categories.

Another limitation, mentioned by four respondents, was that the categories of Interaction Analysis do not provide information which is relevant to "the most important aspects of teaching behavior." Two respondents, for example, felt that Interaction Analysis should identify good and bad patterns of teaching. Two felt that Interaction Analysis should include categories which enable the observer to classify the content of a lesson. One person felt that Interaction Analysis should provide a procedure for classifying the level of thinking of teachers and children.

The educators responding to the questionnaire listed very few comments which indicated negative student reactions, the third major classification of limitations. If they had, this would be perhaps the most important criticism when one considers using Interaction Analysis with student teachers. The two limitations most often mentioned by those replying to the questionnaire were that those learning Interaction Analysis did not like the idea that a number could represent a teaching behavior, and that some teachers, interns, and student teachers were threatened by the prospect of having to analyze their own teaching behavior. This threat can result in behavior which is defensive, negative, indifferent, or rationalizing.

The strengths of the system of Interaction Analysis mentioned by those people responding to the questionnaire, are either related to the nature of the system or to the reactions of those learning the system.

Over 90% of the people who returned a completed questionnaire seemed to think that Interaction Analysis was a significant tool which could be used to provide objective feedback to student teachers, interns, or teachers in service. Most respondents also seemed to believe that the system was simple yet comprehensive enough to include the most important elements in the teaching act.

The most positive statements made by those surveyed were concerned with the reactions of those who learned Interaction Analysis. Student teachers feel that Interaction Analysis is significant because it helps make operational much of what they have already learned about educational methods and theory. Students also appear to think that they have gained insight into their teaching behavior and that this insight will make it possible for them to adjust their behavior to various types of teaching situations.

The Department of Secondary Education at Temple University has been teaching Interaction Analysis to students for two years. This has been done as part of an experiment in which student teachers have learned either Interaction Analysis or taken the conventional course in learning and educational psychology. During this same period some of the supervisors of student teachers in the Department of Elementary Education at Temple have also taught Interaction Analysis to student teachers.

One of the most interesting and significant things about the course in Interaction Analysis has been the reactions of the students in the Department of Secondary Education. At the end of the semester, evaluation forms in the learning theory sections and the Interaction Analysis sections were filled out anonymously by the students. In addition, because of the informal climate created by the staff members teaching both courses, the students constantly communicated their reactions about the course to the instructors.

In general, in the beginning and through the middle of the semester many of the students in the Interaction Analysis course are very negative and resistant toward the course content. The staff has found that the best approach to working with the negative reactions of the students is to accept the feelings and opinions of the students. By the end of the semester things change. As a group, the students are extremely enthusiastic about Interaction Analysis. Many feel that the course is the best that they have ever had. Many feel that they have gained valuable insight into their teaching and that this insight will carry over after they have become teachers. The staff members' evaluations of the students in student teaching and in role-playing situations often confirm the perceptions of the students about the effects that Interaction Analysis has had on them.

SUMMARY: CONCLUSIONS AND IMPLICATIONS

This chapter has reviewed some of the recent research in the field of teacher education using the Flanders' system of Interaction Analysis. Several conclusions seem to be justified from these studies.

Hough and Amidon conclude that the skill training in control of verbal behavior which is associated with the learning of the system of Interaction Analysis enables student teachers with relatively open belief systems to behave in a more indirect manner, thus allowing their pupils more freedom to expand their own ideas.

Kirk found that student teachers who learned Interaction Analysis talked less, had more pupil-initiated talk, and resisted to a greater degree the tendency to become more direct at the end of student teaching than did student teachers not trained in the system.

These conclusions are supported by the findings of Furst who reported that student teachers who were taught Interaction Analysis accept student ideas and student behavior significantly more than do those student teachers not trained in Interaction Analysis. Furst also reports that student teachers trained in the system show evidence of significant positive change in attitudes toward teaching during the student teaching experience when compared with student teachers not so trained. Student teachers trained in Interaction Analysis seem to be more aware of their own verbal behavior than the untrained student teachers.

Zahn, whose findings substantiate those of Furst, Hough and Amidon, and Kirk found that student teachers who learned Interaction Analysis developed more positive attitudes toward student teaching than did untrained student teachers. Zahn also found that the potentially negative effect of the cooperating teacher upon the attitudes of the student teacher is greater when students are supervised by conventional techniques than they are when students are supervised by college supervisors who use Interaction Analysis as an objective feedback tool.

In analyzing the reports of a national survey of people working with Interaction Analysis either as a research tool or in teacher education, Amidon and Simon found that most of those reporting expressed the opinion that Interaction Analysis does help the teacher gain insight into teaching by providing a tool which teachers can use both to help gain self-awareness and to change behavior.

Those who have had extensive experience using Interaction Analysis with interns, student teachers, and teachers in service, tend to agree that there are some general guidelines which might be helpful to people who want to use the system. These include general attitudes as well as helpful specific techniques and procedures. Some of the most important guidelines follow:

1. A person teaching Interaction Analysis probably will want those whom he is teaching to have a personal teaching experience to refer to during the period of instruction.

2. Between 12 and 30 hours of training in Interaction Analysis appears necessary if Interaction Analysis is to be effectively learned. If less than 12 hours is spent, students often fail to see the reason for learning the system. On the other hand, 30 hours is probably long enough to spend learning the fundamentals.

3. The person who teaches Interaction Analysis or supervises teachers who are learning Interaction Analysis will want to have spent time using Interaction Analysis as an observational tool himself before he attempts to help others become familiar with the observational procedure or interpret matrices.

4. The approach of the supervisor in the supervisory conference should probably be one of helping the teacher to clarify and understand his teaching pattern. The supervisor will want to use the matrix as a basis for presenting objective data to the teacher. One of the most difficult problems for supervisors is to avoid *telling* the teacher what to do. The approach which is perhaps most effective is for the student teacher or intern to perceive the conference as a place where he will evaluate his own teaching with the help of the supervisor and Interaction Analysis.

5. As the basis for a conference with an intern or student teacher the supervisor will probably want to have either two matrices to compare or one matrix and a statement of the teaching goals. Effective conferences focus on such questions as "What evidence is there in the matrix to indicate that my teaching goals were achieved?" "How did the way I reacted to pupil comments differ in these lessons?" "What was there about the second matrix which would indicate an increase (decrease) in pupil interest in the lesson?"

6. Those who supervise students or who teach Interaction Analysis should attempt to communicate the point of view that Interaction Analysis is an approach which helps teachers focus on their own teaching. It is not *the* answer to all of the pressing problems in teacher education. It is useful to the extent that a teacher is willing to explore and analyze his own teaching, and it is only one way to look at the teaching-learning process.

7. Some people who teach Interaction Analysis to student teachers and interns become dismayed because of the resistance they encounter. This resistance indicates that the students are openly reacting to an attempt to get them to look at their teaching. They are probably reacting because they feel threatened by the prospect of an objective look at their teaching behavior. Apparently one of the best ways to work with the resistance is to accept it and help the students clarify it.

8. Once the student teacher or intern is comfortable with the tape recorder in his room, tapes can be used to provide specific teaching situations for analysis in seminars. These tapes give the student teacher or intern a way of bringing his own teaching into the seminar where he can have the help and reactions of his peers. It cannot be emphasized too strongly that the student teacher should make a tape of his teaching only if he really wants to.

9. If change in teacher behavior is desired, then the most meaningful learning of Interaction Analysis categories is accomplished if students can produce the categories behaviorally when they are given a list of category numbers. That is, it is perhaps more important for students to practice by taking a list of category numbers and then role-playing these categories than it is to be able to categorize a short sequence of interaction.

Most of those who have had extensive experience using Interaction Analysis in teacher education believe that Interaction Analysis does help the teacher gain insight into teaching and provides a tool which teachers can use to consciously change their behavior. If people continue to use Interaction Analysis and similar techniques, and continue to find significant changes in behavior and attitudes of student teachers, then Interaction Analysis may indeed represent a significant step forward in teacher education. Perhaps the major contribution of Interaction Analysis research has been to focus the attention of teacher educators upon the idea that the classroom should be the central focus of study for those interested in the improvement of teaching, and that if we are interested in improving teaching then it is the teacher's classroom behavior that we must be concerned with and attempt to change.

References

1. Amidon, E. J. and Flanders, N. A., *The Role of the Teacher in the Classroom.* Minneapolis: Paul Amidon and Associates, 1963.
2. Amidon, E. J. and Flanders, N. A., "The Effects of Direct and Indirect Teacher Influence on Dependent-Prone Students Learning Geometry." *Journal of Education Psychology,* 1961, 52, 286-291.
3. Amidon, E. J. and Giammatteo, M., "The Verbal Behavior of Superior Teachers." *Elementary School Journal,* 1965, 65, 283-285.
4. Amidon, E. J. and Hunter, E., "Verbal Interaction in the Classroom, Verbal Interaction Category System." Philadelphia: College of Education, Temple University, 1964.
5. Anderson, J. P., "Student Perceptions of Teacher Influence." Unpublished Ph.D. thesis, University of Minnesota, 1960.
6. Flanders, N. A., "Teacher Influence-Pupil Attitudes and Achievement, Final Report." Cooperative Research Project 397, U. S. Office of Education, 1960.
7. Flanders, N. A., "Helping Teachers Change Their Behavior." University of Michigan, 1962.
8. Flanders, N. A. and Amidon, E. J., "Two Approaches to the Teaching Process." *National Education Association Journal,* LII, 5, May, 1962, 43-45.
9. Hough, J. and Amidon, E. J., "An Experiment in Pre-Service Teacher Education." Unpublished paper, American Educational Research Association, February, 1964.
10. Hough, John B. and Amidon, Edmund, *Behavioral Change in Pre-Service Teacher Preparation: An Experimental Study.* Philadelphia: College of Education, Temple University, 1964.
11. Hough, John B. and Duncan, James K. "Exploratory Studies of a Teaching Situation Reaction Test." Paper read at the annual meeting of The American Educational Research Association, Chicago, Illinois, February, 1965.
12. Kirk, J., "The Effects of Teaching the Minnesota System of Interaction Analysis on the Behavior of Student Teachers." Unpublished Ed.D. thesis, Temple University, 1964.
13. Rokeach, Milton, *The Open and Closed Mind.* New York: Basic Books, Inc., 1960, p. 71.

CHAPTER VII

Teaching—Craft or Intellectual Process?

HERBERT F. LAGRONE

The title of "Teaching—Craft or Intellectual Process?" indicates an alternative. The alternatives for approaching professional teacher development at this point in time better describes my effort. You will find an obvious bias on my part, because the real reason for this article is to report on the work of the AACTE-AOTE sponsored TEAM project.

Education in both public and private schools and all levels from the nursery school through the specialized post-doctoral centers is on the threshold of an exciting new era. The last three decades of the twentieth century can be recorded as the golden age of education, but this is not assured nor can it be insured by money alone or legislation regardless of administrative level.

The potential of this period is dependent upon the wisdom we show as we explore and act on the alternatives available. We are now at a point of critical decision. If we can capture the vision created by President Kennedy and evidenced as a major concern of the able leadership of President Johnson, the choice is not really too hard. We can take a direction that I like to call a new opportunity which gives professionally prepared teachers a bright and challenging future, or we can continue to allow teaching to be lowered to the common knowledge level.

The urgency of our task to improve the professional preparation of teachers is increased manifoldly by the legislation now being considered by the 89th Congress and nearly all of the legislatures of the fifty states. The year 1965 will prove to be a base year for the decades to follow. But in some way *all* of this legislation and vivacity is dependent upon the teacher, and we in this assembly have chosen to be responsible for the professional development of the teacher and we must stand accountable to all of society.

The ultimate goal for education in the United States of an ever increasing level of educational opportunity, quality and equality is dependent upon people and the concepts they use. I believe that the tempo of the contemporary scene requires a dramatic if not traumatic revision of our concepts rather quickly. I doubt that more schools like the ones we know so well will make the real difference now demanded. New curricula designs will not in themselves solve the problem. More teachers as now prepared will help but not reach the goal.

Improved leadership in state departments of education, and everywhere else, is imperative, but there must be new purpose and substance for leadership. Research and service centers will add to the body of knowledge and extend existing services as we know them to more students, but the relevant new knowledge must be integrated, and principles upon which the services are based be critically assessed. I am trying to state that as you explore alternatives, assumptions must be made explicit and actions tested by definitive criteria.

I try to rise above my limitations, but like the working majority I falter now and then because I have lost some of my objectivity by a too close association with only one alternative. What are some of the alternatives that you should evaluate for professional teacher education? I would like to mention four operating alternatives and present a fifth one for your consideration.

The first and dominant plan for professional teacher development I call the traditional program. The plan which includes courses such as an introduction to or foundations of education, education psychology, curriculum, methods, and student teaching is almost universal. Contrary to the views of many people these courses are not or no longer are they prescribed. The development of the concept of a program of teacher education within an institution precludes the prescription. This professional curriculum has evolved over time from a variety of currents, and sometimes cross-currents, within the higher education plan of a dynamic democratic culture with an industrially oriented economy. Notions about the academic year, credit hours, majors and minors and titles for the bachelor's degree are a part of the evolutionary growth of higher education and these ideas are clearly reflected in professional teacher education.

The traditional curriculum has the advantage of being established and represented by an "in-group." Being established it is strengthened by the fact that this design is considered to have served the schools and nation well. The United States has grown and prospered. A diverse population has been at least partially assimilated. Public education has continued to serve in both number and percentage an ever increasing population at a minimum cost. Insofar as a nation can be successful in war, the educational effort stood the test. And when the decision to launch a satellite into space was finally made, it was done in far less time (about 100 days) than it takes to change a curriculum in either schools or colleges.

The basic question to ask concerning the traditional curriculum is: Will the design meet the demands of the future? I have answered this question in the negative for four reasons: (1) The design disassociates interrelated knowledge. (2) The existing structure is not economical in terms of learning, time, and human resources. (3) The content as ordered and presented fails to provide the power essential for productive thought and intellectual growth. And (4) there is little validity for the principles of learning that must be employed in instruction even though they are not defined.

The courses in this traditional curriculum represent several of the parts of the broad field we refer to as education with a capital E. Education as a broad field is actually a rather loose association of the almost discrete sub-divisions of Educational Psychology, History of Education, Administration, Guidance, etc. Each of these are nearly autonomous. They may be related in only very broad or general terms.

The framework or structure of the sub-divisions should not be restricted by the limiting criterion of demonstrable relevance to teaching acts and performance responsibilities. To apply such a criterion would weaken the productive power of the sub-divisions. I believe the structures of the sub-divisions reflect *within* factors that I have called research and specialization. A review of the textbooks, research, and scholarly publications in the several fields supports my point of view. Much of the content is valid for research and specialization but is not necessary for teaching. The pre-service professional curriculum does not have to use all that these fields produce.

Added to the structural problem is the fact that a given teaching act or performance responsibility cuts across the sub-division lines. When we attempt to fit the pre-service professional education among the sub-divisions we either disassociate relevant content which results in a loss of the economy and power of the content, become repetitious, or, possibly, some of both. We need to give serious thought to the representation, economy, and power of the domain of knowledge.

I must admit that as I study the present content outlines for the pre-service professional curriculum I fear that we have failed to appreciate the power that is offered by an organized body of knowledge. There is a self-generative quality to the systematic and orderly basis of content that stimulates the creation of new knowledge, and at the same time this organized intellectual framework frees the holder of that knowledge from the bondage of limited thought that is the outstanding property of disassociated information. One of the roots of productive thinking is in the discovery of the fundamental structural properties of the problem, the ability to see relationships between the different elements of the structure, and organization of the field so that sensible thought can be applied to it. A disassociated, disorganized system is powerless. There is no generative quality, no freedom, no direction.

I believe now that disassociation has been the source of the unfortunate and mythical dichotomy between theory and practice.: All practice is actually based on some theory or combination of theories, but when the theory is unorganized or ill-defined the teacher is forced to a very limited *moment by moment survival plan.*

A second alternative on the contemporary scene has been proposed by James Bryant Conant. His plan operates within a complex of many other recommendations, but when isolated it is based on an apprentice-master model for professional development. Historically this is the very, very old design that was abandoned in the latter part of the 19th century or early part of the 20th century by other professions. I am sure that there are some values to practice teaching as conceived by Conant, but the relationship of this kind of activity as appropriate content for the basic purposes of higher education is far from clear. The internship is considered essential in the total development of the professional practitioner in nearly alll professions, but the timing, control, and relationship to the total program have considerable variation.

Medicine has been most often cited in the analogies given for the internship. McGlothlin reported in 1960 that no medical school now requires the internship as a prerequisite for the *degree* titled Doctor of Medicine, and about half of the states will permit a physician to be licensed after graduation from a medical school. Higher education within the professional schools has found or is seeking other means to relate theory and practice under the control and supervision of the university.

This second alternative seems to have all of the limitations of the traditional curriculum plus a few others. Talk about education and teaching will be done by different people and the body of knowledge remains disassociated.

In addition, if one of the functions of higher education is to provide a synthesis of the sum of man's experience and knowledge in each domain of knowledge, it would seem unwise to deliberately restrict the prospective teacher to work with *a* teacher in *a* school of *a* community and *a* clinical professor. The support for this alternative must be based on purposes substantiated by something other than intellectual development.

The possibility of state and/or federal support for the most expensive part of the present program is attractive. Living within the existing order would be easier than actively pursuing a conceptual change. But teaching in the future cannot rise to a higher level when the base is only a copy of the present. Higher education will find it difficult to defend the excess of time and limited source of substance within an extended apprenticeship as college credit not to mention the problems of what constitutes valid graduate credit.

There must be direct experience, but I do not believe that all of it must be in the public school classroom. I also believe that carefully designed and controlled direct and simulated experiences can be more efficient and productive. The link trainer for pilot training or the navigation training simulator may not be completely analogous, but I prefer to think of them rather than the cadaver used in medical education. There are some things that can be learned better in controlled situations.

I feel very strongly that we have taken a highly randomized approach to direct experience, and I must publicly confess that I was a party in expressing this quantitatively, rather than substantively, as nine weeks full-time or eighteen weeks part-time. I must admit that we have tended to reduce the randomness by encouraging direct experience at the time of the opening and/or closing of the school year and in some institutions we have included experience in other areas. I believe that what we have actually said is something like this: We do not know what we want to happen, but surely it will happen if we give the teacher education student enough exposure. There is some value in an apprenticeship form of training, but I do not want to continue to rely on it so heavily.

Competencies in many of the verbalized teaching behaviors such as defining, questioning, explaining, etc., under a variety of conditions can reach a rather high level of performance outside a real classroom. Many of the behaviors related to learning processes such as motivation-producing behavior can be developed in what Stanford University has called a micro-teaching situation. Most, if not all, of the behaviors I have classified as out-of-class instructionally related or out-of-class school oriented can be approximated rather well by a modified form of direct experience, such as role playing and cooperative endeavors within the instructional program for pre-service professional education.

The third alternative of no professional preparation was vigorously proposed in the late 1950's but is fading now. Elizabeth Maccia has referred to this approach as a design to reduce teaching to a baseless art. B. Othanel Smith likes to describe this as the man on the street level. Some have said that all one needs in addition to some knowledge about a subject area is common sense. I wonder which of the two conflicting definitions for common sense is intended, (1) the unreflective opinions of *ordinary* men or (2) sound prudent judgment. The first definition demands little knowledge and no thought, but the second cannot be sound or prudent or, in fact, a judgment without some process as well as knowledge.

While attending the last annual meeting of the Association of American Colleges I reached the conclusion that the community of higher education has moved beyond the earlier arguments of the art of teaching versus a science of teaching. One presentation outlined the preparation needs of liberal arts college teachers: included were an understanding of the student, learning processes, and some methods. In addition there was a plea for a better understanding of the purposes, organization, administration, and operation of the college or university. Also presented were some of the activities within the Graduate School of Arts and Sciences of Harvard University to help prepare graduate students for college teaching: non-credit lectures and seminars by the faculty, special help to teaching fellows, and the analysis and discussion by groups of eight to ten fellows of audio recordings and typescripts prepared from the tapes made in their classes.

One of the appeals of this alternative is that it is thought that this would correct the shortage of adult persons in the classrooms of the nation. There are statistics that create doubt about this idea. Another appeal is that it would solve all of the major curriculum problems of the college. A worthy goal, but anyone with experience on the curriculum committee of an institution would doubt this after a few encounters concerning pre-medicine, pre-law, pre-dentistry, pre-musician, and now pre-graduate study. Even the fifth-year for professional teacher education does not solve the curriculum problem because few have really given serious consideration to pre-teaching. What would happen if it was determined that the teacher should be a better than average social and behavioral scientist?

Another very important point that the non-professional preparation plan misses is that there are some 2,000,000 teachers working with learners each day for several hours. Each day they organize a body of knowledge in some way, employ a theory or theories of teaching and learning, and evaluate intellectual growth. These factors are there and they will not go away or be resolved by argument. The question to be asked is: Are the behaviors in these areas adequate now and for the future? The study of typescripts of classroom discourse forces a strong negative answer.

The fourth alternative I have called bits and pieces with no disrespect intended. Others have called these innovations and experiments. I must admit that I have some reservations about the general use of the terms innovation and experiment because a lot of what has been done has been more manipulative than substantive.

To offer a seminar for a course, give a lecture on television rather than before a class, or substitute a random observation by television for a random observation in a class does not necessarily change the basic content. Nor does the alteration of the recruitment source or the creation of a fifth year have much to do with substance. Herbert Schueler and Gerald Lesser after reviewing considerable research introduced as a common characteristic of the bits and pieces approach the phenomenon of no significant difference.

The true innovations have added to the body of knowledge and I am sure that part of the significance problem should be attributed to inadequate measures of teacher effectiveness. But I doubt that a special program here and there with unusual support and primarily concerned with arrangements will provide the basis for the changes necessary for the revision of the professional teacher education curriculum. New substantive elements necessary for change are lacking in most instances. Far too often the special projects have been based on and operated within the same basic conceptual framework of the traditional program.

Both the history and logic of curriculum development in any area clearly indicates that a new direction for a major curriculum change is dependent upon (1) new knowledge or the discovery of new relatiionships among existing knowledge, (2) advances in learning theory and the application of the theory to instructional activities, and (3) in most, if not all instances, advances in technology. The new curricula in mathematics, the several sciences, and foreign languages are good examples of changing curriculum designs which illustrate the application of recent advances in knowledge, learning, and technology. A comparable change in the professional teacher education curriculum is now possible and must be made.

In this context I want to present the fifth alternative that has been developed by the TEAM Project. I will not be able to review all of the recent advances related to teaching and teacher education, and I may fail to mention something you consider of greatest importance. However, I will try to give a quick overview of some of the material which should be considered in the selection and organization of pre-service professional content in a program of teacher education.

The recent studies of teaching by researchers such as Smith, Hughes, Bellack, Taba, Flanders, and others have produced valuable new knowledge of teaching. Teacher behaviors and teaching competencies have been and are continuing to be studied by a number of objective analytical techniques rather than by the more subjective or impressionistic approaches of prior years. The variables that are inherent in all teaching-learning situations are now better defined and their interrelationships more clearly seen.

Advances in the research and the applications of the reseach in learning have reached a new level of meaningfulness for curriculum development, as shown by the aforementioned fields of mathematics, sciences, and foreign languages and I should add a number of the social sciences. Work by Piaget, Bruner, Ausabel, Hilgard, Woodruff, Taba and many others illustrates the progress in this vital area. The studies in creativity, thinking, and gifted children represented by Getzels, Guilford, Jackson, Aschner, and many, many others have added new dimensions of understanding to both the meaning and application of learning research. The study of human behavior through improved research designs and extended longitudinal investigations adds to the preceding research. Within the last few years the behavioral sciences generally have attained a new level of maturity.

Work in programmed instruction is often considered with the advances in technology, but the contribution of this new development to learning and instruction has been most important. Programing has clearly illustrated that certain basic concepts of learning and knowledge can be identified and controlled in a teaching-learning situation. Programed instruction has added new and stronger emphasis to the determination and stating of objectives. But the work of Bloom and Mager offer the basis for meeting the demands.

Theories of teaching or instruction have received considerable attention by several scholars such as Elizabeth Maccia, George Maccia, Jewett, Ryans, and others within the last few years. Recent developments in areas such as information theory, communication theory, game theory, and systems theory are being critically studied and their relationships to instruction identified. The research in linguistics and the renewed emphasis on analytic philosophy is also related to and supports the work in theory of teaching. The study of knowledge, structures of knowledge, and ways of knowing have a particular meaning for the development of the pre-service professional preparation of teachers.

The area of technology is advancing so rapidly that even a brief summary statement would be dated. Technical advances in video tape recording, continuous and timed 8mm and 16mm filming, film sensitivity, and all forms of production and processing along with the advances in design, quality, and simplicity of equipment and control mechanisms make it possible for technology to meet any definable need of teacher education or research at a reasonable cost.

The properties of the new media make possible a completely new and different approach to the study of teaching and the curriculum for professional teacher development by: (1) Extending human capacities—the limitations of human sight, hearing, attention, and concentration are reduced by magnification, amplification, selectivity, and isolation. Deficiencies of recall and interpretation are minimized by authenticity, reproductivity, and simplification. (2) Providing new content—the whole of teaching experience becomes available by the renewal of the limitations imposed by time, space, and distance. Replication, collation, integration, and authenticity make not only new but a new kind of relevant content available. (3) Interrelating existing content—the observation, demonstration, and participation activities in the preparation of the prospective teacher reach higher levels of efficiency and pertinence. Concurrent interrelated observations (simultaneity) of acts of teaching and acts of learning are better related for more effective learning. (4) Increasing learning potential—perception may be enriched, tryout situations simulated, and feedback provided by a variety of new media. Automaticity, immediacy, and variation increase the possibilities for meeting individual differences and special interests.

Since no area of man's knowledge has yet become final, assumptions, implicitly or explicitly identified, are made. The work of the TEAM Project has indicated that the assumptions essential to the development of the professional curricula may be grouped into three major categories: teaching, learning, knowledge.

The active nature of teaching requires the making of choices; thus teachers must make decisions. While I consider this to be a simple and obvious fact, you may wish to consider it another assumption. To expand on this idea I wish to introduce two very important assumptions: (1) The teacher's conceptual scheme for organizing his environment provides the basis for selecting alternatives, and (2) the teacher's behavior is the means for expressing the chosen alternative. These two assumptions are another way of saying that teaching is at the highest possible conscious level and that there is an awareness of the alternatives available. Teaching behavior is considered to be based on intellectual processes rather than habitual responses or imitative or emotionally oriented behavior.

If these assumptions on teaching are accepted, then the professional curriculum must not only provide the essential facts, principles, and working hypotheses basic to effective behavior, but must sharpen the sensory or perceptual intake so that all relevant information may be integrated within the intellectual system.

The TEAM Project has assumed that learning not only involves the processes of learning but also the individual learner, including his past learning and experiences and the culture in which his experience has occurred. Learning is considered as an active transaction between the individual, his environment, and the content selected. The information encountered by the learner is fitted to his mental scheme. Through a progressive organization and reorganization of his mental scheme thought matures. If this approach to learning is accepted, the professional curriculum must include as well as employ these basic concepts. The area of learning suggests a pattern of organization and the kinds of experiences to be provided by the curriculum and the associated instructional design required for intellectual growth.

The TEAM Project has assumed that a given lesson, period of instruction, unit, or individual study activity is no more than a small part of some larger arrangement of accumulated knowledge. The content of the moment must be considered in terms of a structure as well as a purpose. Also assumed is that the professional body of knowledge must have a demonstrable relevance to the teaching activities and performance responsibilities of the teacher.

A curriculum for the professional development of the teacher must deal with the kinds, sources, relationships, and justifications of knowledge. In addition the professional curriculum must seek a representation that will provide a maximum economy and effective power.

The TEAM Project has attempted to select and organize some elements of a pre-service professional curriculum that, I believe, will at least partially satisfy the assumptions that have been made. The AACTE has published a working paper that presents a detailed outline of the content. I will restrict myself here to a brief review of the five major curriculum areas. The instructional design for each of these courses will employ extensive laboratory work that includes carefully selected and controlled direct and simulated experiences. Competencies related to nearly all of the identifiable teacher behaviors will be developed within the instructional program rather than delayed until student teaching.

The first area of content I selected is centered on the "Analytical Study of Teaching." The analytical approach through the study of recorded teaching episodes is designed to extend the conceptual scheme of the teacher education student and increase his ability to identify and relate the variables involved in teaching. A systematic study of teaching situations and the environments for teaching is expected to provide a substantive basis for concept formation. In addition the student will analyze the same teaching-learning situation but employ different sets of assumptions. In the study of acts of teaching and acts of learning the teacher education student will perceive pupil behavior, make an elementary level diagnosis from the perceptual input, predict an action, and explore rationalizations for the action.

The second major area of content focuses on the nature of knowledge. I have used the title "Structures and Uses of Knowledge." The content in this area is designed to assist the prospective teacher in the representation and understanding of the factors which effect economy and power. The student in this course will become acquainted with several approaches to structure because some of the more crucial decisions the teacher makes or will be making in the future will be in content selection and organization. With the explosion of knowledge this responsibility will continue to increase.

Teachers must be able not only to employ the processes of analysis, synthesis, induction and deduction, but also be able to follow and where necessary redirect the students' use of the processes. The content of this area will develop the competencies demanded by the logical aspects of teaching and the analysis of content. I believe some very interesting programed materials can be developed and employed in this area.

The third area of content focuses on the study of human learnings. I titled this course "Concepts of Human Learning and Development."

Behaviorally, the prospective teacher should be able to analyze a selected learning situation in terms of its elements and processes, differentiate between levels or modes of representation of learning and identify the cognitive tasks involved. Within this area the idea of the micro-teaching situation offers outstanding possibilities for the development of the competencies basic for effective teacher behaviors related to the learning processes.

The fourth course provides the prospective teacher an opportunity to refine, extend, and integrate the concepts of teaching behaviors, structures of knowledge, and learning which were developed in the first three courses. The focus of this course is "Designs for Teacher-Learning." At this time the teacher education student looks at a problem within a domain of knowledge and determines the demands for learning, for the learner, and for the teacher. He develops a teaching strategy that attends to (1) the nature of specific objectives, (2) relevant learning principles, (3) structuring of content, (4) learners, and (5) interactions. The instructional design is expected to be internally consistent.

The fifth area I have called "Demonstration and Evaluation of Teaching Competencies." I now doubt that this title effectively communicates the meaning I hope to give. I am trying to convey an idea of direct experience that is very different from what we now describe as student teaching. Any critical examination of practice teaching reveals tremendous weaknesses in both its philosophical and operational bases. I do not doubt that student teaching is the best course now offered, but I seriously doubt that this should always be true. What I have in mind is a tempering experience that introduces all of the complexities of several rather than one teaching situation after certain basic competencies have been developed and refined in the preceding courses. The prospective teacher approaches this experience with confidence in his knowledge and abilities rather than the anxiety we now observe.

This is more than a test of competencies in that the evaluative procedures now available through the new media provide a basis for self-appraisal and planning for continuing professional growth. In the latter part of this course the critical study of theories of instructional and educational issues has been introduced. By this time the teacher education student should have enough knowledge and experience to work in these very important areas.

A curriculum design of this type is orderly and sequential. There are no restrictive upper limits and ample room for meeting individual differences. While it is highly intellectual it does not ignore the teacher education student as a person. The design provides the "for what" and "why" essential for self-adjustment and self-realization. I believe that a refined version of the TEAM Project plan offers each institution the opportunity for developing its own unique program.

I have not been very severe in my criticism of the TEAM Project. In our discussions with faculty groups in several institutions we have had other questions. Some of the most common questions have been such as, (1) Is the typical college, school, or department of education staff prepared to work with this kind of approach? (2) Can the typical college student who enters teacher education work at this higher level? (3) What will be the impact of the new curriculum or inservice personnel? (4) What special kinds of facilities and equipment will be needed for the implied instructional design? (5) Has the affective domain received adequate attention, (6) Will this design actually develop better teachers?

I will not attempt to answer these questions here because the answers should be based on critical research rather than opinion. Since the logical and psychological principles upon which the proposal is based are sound, strategies or plans for implementation will follow.

CHAPTER VIII

Implications for Institutional Actions

Asahel Woodruff

Educators were not prepared to react constructively when critical attacks first began on education. We were unprepared because our critics and many of us expressed sudden, generalized discontent over the end product without identification of specific sources of difficulty; because we had no clear idea of the direction constructive actions should take; and because constructive action has long roots in both research and the arduous process of translating research-based knowledge into working programs, and those roots did not exist.

It has taken more than a decade to cultivate the necessary research roots and the analytical and developmental processes. They are beginning to exist now in partial, but already useful form.

One of the first conclusions to emerge from a long look at public education and teacher education can be expressed in Francis Chase's words in the Third Annual School of Education Lecture at Cornell University last April:

> The forces of change are so powerful and pervasive in their effects on education, it will not suffice for teacher education to be just a little better or just a little different. It must become fundamentally different and radically more effective. The case for change grows out of cultural and social evolution, and may be established simply by looking at the changes taking place in the schools.

I will not attempt to enumerate those changes here for they are well known.

The Teacher Education and Media Projects has presented us with a new set of concepts about teacher education. A careful examination of the new concepts, together with a little empirical experience in trying to apply them, reveals an almost overwhelming task to be accomplished. If it were not for the great promise it offers, one might not have the courage to start, but we have never before had such an impressive foundation in objective data.

Before going directly to ways of profiting from the project, however, it seems wise to say something everyone should know about the project, and, particularly, about its inception. When I became associated with it two years ago, I found that Richard Lawrence, Robert Schaeffer, Evan Collins, B. O. Smith and others had already given much thought to a way of precipitating some constructive changes in teacher education. To my delight, I soon learned they were fully aware of the futility of galloping off in all directions at once, and ready to choose deliberately one direction for a major pilot effort.

By mutual agreement we arrived at a deliberate bias in favor of a cognitive orientation. The decision was not made blindly or without factual support. It was based on the knowledge we then shared of the literature which has since been enlarged, assembled, and listed.

Far from apologizing for this action, our experience leads us strongly to advise it, for it makes a strong and productive effort possible. Nature is systematic, not haphazard. We do better in all enterprises when we recognize this quality in nature and build our enterprises on it.

We may not accurately comprehend the dimensions of that systematic structure at first, but the value of scientific and philosophical methods lies in their power to move us closer and closer to reality, and therefore, make our enterprises more and more effective. This is as true of the educational enterprise as of any other.

If a bias is selected on impressionistic and subjective grounds, it has little chance of being helpful. It is more likely to create extra barriers to progress. We have a moral obligation to be scholars when we presume to serve the educational needs of our country. I recall a statement I heard some years ago to which we would do well to pay attention, "The right to be wrong is a political and not an intellectual right."

If there are data pertinent to our task, we are obligated to know them and use them. It is quite possible that some other bias might have been selected, and those who have objective data that can be soundly interpreted to lead to another bias should have the courage to test their interpretations through empirical programs developed on them.

The TEAM Project is a potent stimulus worthy of national attention for at least two reasons:

First, it is an illustration of a sound and consructive way of using basic data. The data were thoughtfully examined. A conceptual structure was formulated from them. A systematic patern of teacher education was built on the conceptual structure. A set of logical components of that system were identified, and a program evolved. The program is being made operational so it can be tested empirically. This procedure ought to be recognized as a model for nationwide emulation.

Second, the project has produced one specific and very good version of a cognitive approach to teacher education. It is sound as far at it has gone. It is not complete yet, in ways, some of which were mentioned by Dr. Stratemeyer in the Hunt Lecture.

Within the same basic cognitive map, it would be possible to suggest other specific patterns of courses for a teacher education program. Nevertheless the pattern suggested in the project report is promising enough to justify extensive further development and trial by as many institutions as are willing to make the effort.

I could mention other contributions of this project, but will not take time to do so now. Instead, let us turn back to implications for action.

Assuming we want to put these substantial ideas to work, what must we do? Here are some of the requirements as I see them.

First, there is a relatively new body of literature of real substance. As LaGrone has indicated, much of our old literature is subjective and impressionistic. It offers programs without explicating their factual bases. In many instances there is no factual basis for what is proposed.

The new literature is different. It is objective and analytical. It describes real phenomena that have not previously been visible, and thus creates a new subject matter in professional education.

The newly described phenomena have an importance to education comparable to the importance to obstetrics of the discovery of pathogenic agents and their role in maternal and infant mortality.

They include concept formation, decision making, motive formation, verbal interaction between teachers and students, logical dimensions of discourse and clearly definable strategies, silent language and its effects on learning, and some other equally vital components of human behavior in school. Each of these kinds of phenomena has its own enthusiasts who may be called interactionists, or behavioral objectivists, or cognitivists, or conceptual analysts, or something else, but if we will read the literature as a whole, we have in it the base for Chase's "fundamentally different and radically more effective" qualities.

The implication of this development is clear to anyone who has tried to digest the literature. Its meanings are disturbing and exciting. Until most of us have experienced that disturbance and excitement, nothing much will happen in our institutional programs. I think our first task is to get informed. I am not speaking only of you who are here or of a bank of key people throughout the country, but of all the people who serve in faculties of education and in academic faculties that participate in preparing teachers.

Getting informed sounds like a grubby kind of homework. It seems almost like an insult to tell educators they ought to get informed about a body of literature in their field, but there are good reasons for making this suggestion. One of them is easily understood, but not very complimentary. We are busy people, and we simply do not read as much as we should of the technical literature which is the real life blood of our business. I am confident that very few of us have read with real penetration the TEAM report entitled "A Proposal for the Revision of the Pre-Service Professional Component of a Program of Teacher Education."

I am even more confident we have not read the basic literature behind the report. This disturbs me deeply because we are or should be the scholars in professional education, and are, thus, morally committed to the principle that our work should be squarely based on facts. As things stand now, with the traditional program LaGrone has described dominating the scene, the old "gag" is literally true for at least some educators that our present frame of mind would be seriously confused by the facts.

There is always the possibility of letting a few well-informed people set up models for the rest of us to follow. As indicated earlier, this process can be constructive and helpful, and we depend on it in many situations, but it is not the best answer to the need for change. When a faculty tries to adopt a ready-made program before becoming adequately informed in its underlying concepts, there will eventually be confusion and difficulty. This will be particularly marked in the case of the conceptual approach to teacher education. The new programs do not make good, clear sense unil their premises are understood and accepted.

Nevertheless we have always used this process in attempts to help various groups move into the use of productive patterns, and we will no doubt do it now for the new patterns of teacher education which are becoming available.

The new cognitive concepts have an immediate surface appeal. For many there is an initial impression that the transition from the old program to a new one will be relatively easy. This is quickly discovered to be an illusion. The transition is slow and laborious. Without competent help, it can be frustrating and difficult. The difficulty is compounded by the inherent discomfort involved in discarding one conceptual orientation and developing another as many of us have learned the hard way.

The change consists, not of minor alterations, but of a shift to a different set of concepts which are not altogether congenial to our traditional ones. Even though the process is laborious, it is also rewarding if the reconstruction is followed logically through, and once a reasonably full comprehension of the new concepts is acquired, a group tends to find its way, and go on with increasing momentum and effectiveness.

The second requirement has to do with the systematic nature of the new concepts, as compared to the lack of systematic unity in the traditional subject matter of education. This quality makes its demands in at least four vital aspects of our work.

First, under the new conceptual structure, there is now in much greater measure than ever before, a substantial logic of concepts—a conceptual system—that can and does tie together all aspects of the educational process, both in public education and in teacher education. The effectiveness of a program in the TEAM pattern depends on the maintenance in operation of this logical structure. This says clearly we can no longer tolerate disassociated courses for teacher education. Instead, we must have in any one program, a consistent and pervading thought structure, carried out progressively by means of sequenced courses and other necessary experiences.

Second, when we "pass the ball" or part of the "ball" from the college to the schools or from the education faculty to the academic factulty or from AACTE to AST to ASCD to AERA and so on, we must maintain integrity of direction and not start a new ball game each time. And, further, the ball game ought to stay focused on the teaching-learning operation and not dissipate most of its motion on interesting but not really essential study, such as the school system and its social and historical backgrounds, or an introduction to the joys and woes of professional teachers.

Third, there must be enough similarity of ideas between the schools and the colleges so a newly prepared teacher can do in the schools what he was taught in the college. This brings us to the question of what constitutes an adequate college of education and a college-school partnership.

I am fully aware of the realities that make it unlikely that each teacher education institution will contain all the components of a complete operation, but we ought to have some notion of what such a model might look like, and it ought to exist in many institutions.

On the basis of the TEAM Project, I suggest a four-component model. The first and primary one is the research component because we cannot build effective programs without valid data. The second is the development component where research-based knowledge is translated into programs for use in public education and made operational. This has priority over the teacher education component which comes third because teacher education must be derived from what ought to be happening in the classrooms of our schools.

This developmental component cannot be a regular school classroom for several reasons, but it needs to be under the joint operation of the school district and the college, for it is the transmission mechanism between research and school practice. Whether it is called a laboratory school or something else, it is essential to the task of getting knowledge into practice.

The third component, the operating teacher education program, should be under continuous adjustment to keep it abreast of changes made in the classroom programs produced by the developmental component.

The fourth component is the regular school classroom. It receives two imports from the other components. One is a working program from the developmental component and the other is a teacher from the teacher education component who can make the program work.

Fourth, the demands of the developmental task lie beyond the confines of professional education. It requires interdisciplinary teams, not to produce so-called "integrated subject matter," but, rather, to get down to the warp and woof of each subject field, and get it ready for conceptual learning. Among the skills required are value analysis, translation of value goals into behavioral objectives, identification of the intervening variables that are capable of producing the desired behavior, concept analysis of subject matter, translation of selected concepts into teaching materials and plans, and the aligning of goals, content, process, and evaluation into a continuous educational path.

The third requirement has to do with the pace of movement. In my boyhood years we could afford a thirty-year lag because we lived in a static culture with no crises and threats. Today it matters greatly that we make good changes with all deliberate haste. For that, we need a change system which can affect the whole country soon. I do not see how this can be done without strong national leadership which offers two kinds of help.

One kind consists of developed programs in the form of models which can be observed in operation. Such models should not be regarded as attempts by national leadership to force their adoption throughout the country. On the other hand, many institutions will wish to adopt good programs of demonstrated quality. This would be preferable to the present practice of allowing programs to be determined by publishers whose books are adopted as texts.

Apart from this possible outcome, successful models demonstrate the feasibility of achieving good results through developmental efforts based on valid facts and principles, and stimulate faculties to enter the developmental business for themselves. This is the ideal way to proceed. A faculty needs, if it can, to go through the process of mastering basic data, turning them into program ideas, and developing and testing the programs. This process makes a faculty productive and self-directing, but not all colleges can do this. Those who cannot will be better served by models produced in the manner described here than by being left to their own devices.

It is even truer that public school classrooms cannot do the developmental work required to produce better school programs. They need the help of laboratory or developmental centers who can do this for them. Again, this is preferable to the present situation in which school programs are determined by publishers.

Who is to do this? Where can we find this unified leadership? The logical source is found in the groups already associated in the AOTE complex. AACTE seems to be the appropriate body to take the lead. Its Committee on Studies is an appropriate vehicle within the Association. AACTE and AOTE are already responsible for the TEAM Project which has given us a mighty push in a short time, but even the present pace is too slow.

Instead of a two-man staff with a research associate and a secretary, it is time now to talk of a six or eight-man full time staff, working under the general policies of an advisory committee. A central staff of this kind would, then, need to cultivate participation of many colleges and universities in projects of national scope. Perhaps it is time now for the Committee on Studies as a whole to become this advisory committee and to make such a project its full and only business for several years.

An alternative would be to broaden the scope of the TEAM subcommittee and assist it in becoming the spearhead of a vigorous nation-wide change. In one way or another, our professional associations ought to step squarely into the business of improving the work of their constituent members.

Again I contend that if we do not deliberately furnish this kind of help, if we choose instead to be nondirective for fear of being thought to be propagandist, the vacuum will be filled by other strong forces now ready to move in.

It appears virtually certain that massive federal funds are soon to be poured into education. They will change education profoundly and under pressure. Who is going to direct those changes? Should that be left to the fortunes of the agencies who administer the funds? Or should we who stand as America's educational leaders take the responsibility?

The AACTE ought to become a major operating arm of the United States Office of Education for the purpose of seeing that much of its money is used in the most constructive way possible for the improvement of American public and teacher education. It could have this role if its constituent members believed it should and made this belief known in the right way. I urge you to give this idea serious thought.

The fourth and final requirement has to do with the identification and use of personnel who are able to give leadership in this movement and the development of additional personnel as rapidly as possible.

There is currently a competitive search for people who are technically competent in research, in program development, in the media field, and in testing. The demands far exceed the supply. The ablest people are being spread thinly over the country. This means to me that we have an obligation to use the available talent in a way which gives the widest scope to its leadership potential. Therefore, I suggest again that we ought to have some of our best people available to the profession by assembling them as a team to carry out pilot projects at the national level under such auspices as AACTE. In addition, we should prepare rosters of all other technically competent people throughout the country so they can be known and used as consultants wherever they are needed.

The knowledge and experience necessary to produce a larger body of skilled people should be made available at once in graduate programs associated with good developmental centers.

In summary, these are the implications from the work of the TEAM Project as I view it within its contemporary setting.

First, teacher education must be fundamentally different and radically more effective.

Second, a whole new set of concepts is needed and is becoming available.

Third, faculties cannot do anything significant until they are well-informed in a new literature and have assembled it into some organismic and integrated form.

Fourth, a logical systematic quality is present in the new concepts about education, and our implementing organizational patterns and programs must accommodate and capitalize on this powerful factor.

Fifth, the rebuilding task requires several kinds of special skills and can be done only by teams in which these skills are present.

Sixth, for the many colleges and schools that need such help, there must be a bridging system between research-based knowledge and America's classrooms, consisting of a developmental process to translate the products of the research component into working model programs which can be installed without disrupting the instructional system.

If this kind of help is provided on a national level where it is most highly visible and accessible, it will probably have maximum impact on the country. For those faculties that can do their own developmental work, the models can still serve as evidence of what can be accomplished when intelligent effort is expended.

Seventh, AACTE and its allied professional associations should take over firmly the national leadership in program improvement with a greatly increased pace and by making competent technical talent available to the whole country.

I hope most of all that we can stimulate faculties all over the country to engage seriously and heavily in the process of getting well-informed and pursuing the same developmental struggle that has marked the TEAM Project and some other movements like it in various places. Unless programs are natural expressions of clear conceptual understandings in the minds of those who carry them out, they have little power, and power in our programs is what we greatly need.

CHAPTER IX

Prospects and Priorities for State and Federal Aid for Student Teaching

L. O. Andrews

Schools and colleges have been operating programs of student teaching and other professional laboratory experiences with financial support on the level of the proverbial shoestring. The real need has been present for a long time, but recent pressures and problems have begun to highlight the situation and bring our concern to a sharper focus.

In the days when most student teaching was carried on in laboratory schools under more or less college control, financial support was clearly a college problem. Even though college budgets then were relatively small, the dimensions of the direct experience program were also rather limited; and so were the demands upon the usual teacher in the public schools.

Since the end of the Second World War the enrollments in student teaching have almost trebled, public schools are used as laboratories for probably 90% of the student teachers; some 40 to 50 times as many teachers are working with student teachers now as compared to the 1920's, and the demands upon the classroom teacher have steadily increased, thereby raising the public's expectations of the desired competence of the teacher to far higher professional levels. Student teaching is now a cooperative enterprise carried on in two separate institutions —schools and colleges, with separate lines of authority and separate sources of support. Looking at the present situation analytically, it is little wonder that neither type of institution has been able to find adequate financial support for this joint enterprise.

If college enrollments were declining and local support for public schools were increasing rapidly the problems of support for student teaching might not be of crisis proportions, even now. But the tidal wave of post war births will be student teaching in 1967-69, local support for public schools is being strained to the utmost, and the competition between colleges for well qualified supervising teachers is rapidly becoming acrimonious and unmanageable in various parts of the country. The clear demands of the times are for teacher education programs that will produce beginning teachers with a demonstrated level of competence far higher than ever before. Therefore, thoughtful members of all levels of the teaching profession are beginning to see the need for radically different and substantially higher levels of financial support for student teaching than has ever been envisioned before.

FOUR AREAS OF GREAT NEED

Most administrators and full-time workers in the field of student teaching have been so absorbed with the immediate tasks of their own assignments that far too little attention has been given to an analysis and projection of these needs in the several states, in the country as a whole, and for the entire range of professional laboratory experiences. It is a sad but rather accurate commentary on the present situation that few people would have concrete and well conceived ideas of what best to do with large federal appropriations were they suddenly to become available for the laboratory phases of teacher education, as they have in vocational education, medical and nursing education, and many fields of scientific study.

The present writer lays no claim to having the right crystal ball, but he can share his own slowly maturing judgments following many months of careful consideration of these matters. No attempt will be made to list the following four areas in any order of priority, for priority analysis seems to wind up with the hen and the egg dilemma. All four are desperately needed, and probably all four should be emphasized concurrently rather than consecutively. The order of presentation finally chosen is that in which this author believes somewhat adequate financial and professional resources can be marshalled under existing conditions; and these resources will be discussed in a later section.

1. *Applied Research and Development*: Much information, much experience, many ideas, many hypotheses are available if only they could be well organized and put to work. The leaders in the field could develop a better rationale for student teaching and other direct experiences than we now have. The related disciplines could be searched for concepts on which to develop a far better theoretical analysis of the contribution of direct experiences to the development of a superior beginning teacher.

Much has been written in the last two years of the responsibility of the state for student teaching, including maintaining high quality programs and their financial support. Some of our leaders are becoming convinced that many of the problems of student teaching (especially improving the operation of programs, eliminating competition, and bringing some order out of the increasing chaos) must be solved at the state level through the cooperation of all concerned—schools, colleges, official state agencies, and professional organizations. To do this will require cooperative study groups, pilot programs, new designs for experiences and programs, new cooperative working arrangements in local, regional, and state areas, and the dissemination of the findings and experience reports.

Even simple analysis of our experience with innovations and modifications as well as the more systematic evaluation of the try-out of new programs will add to our existing understanding and perceptions of desirable directions for change and improvement. The less formal action research can be used to engage the interest and involvement of many more of the persons now participating in the laboratory phases of teacher education.

It is a tragedy that the above activities have not been vigorously and extensively pursued for the last decade or two; but they are still the essential activities that can have a major role in the design of better experiences and in giving better direction to our efforts.

2. *Basic Research*: The fact that much early research in the area of student teaching was mechanical and proved very superficial probably has retarded more sophisticated research efforts in the recent past. Leaders in both student teaching and research now realize clearly that fundamental research in student teaching is extremely difficult, complex, and generally requires a team of skilled researchers from several disciplines as well as substantial financial resources. This being so, it is not surprising that doctors' dissertations and individual research have been largely unproductive. At many institutions the rapid turnover in positions of responsible leadership in student teaching has left the field with relatively few persons thoroughly knowledgable in the area; and most of them are very limited in their understanding of, as well as skill in, research techniques.

The related disciplines have been developing at an astonishing rate so that there are now many areas in which concepts appear to have a very real relationship to student teaching, if only proper studies could be made—perceptual psychology, personality theory, group dynamics, self concepts, sociology, anthropology, mental health, inter-personal relations, to name just a few. Techniques are now available for research using newer evaluation procedures and making detailed longitudinal studies of the development of young professional teachers. Some results from the recent research on teaching are now beginning to be included in teacher education courses, and far more could be if both the basic and applied research approaches could be more effectively used.

3. *Preparation*: Reference has already been made to the astounding increase in the numbers of persons involved in the laboratory phases of teacher education. Courses and many other procedures for upgrading the skills of supervising teachers are not new, but a majority of the classroom teachers who begin working with student teachers for the first time have never had any formal preparation for this responsibility, nor even any real opportunity to think their way through the roles of the persons

involved. The turnover in college supervisors in many places is reaching alarming proportions and not very many of the newly assigned ones have even the sketchiest orientation. More and more it is being recognized that a competent educator in his particular assignment is not indeed, *ipso facto,* thoroughly competent in his teacher education role. With the roles of the teacher becoming ever more complex, it is hardly startling to observe that a river cannot rise above its source, nor can a profession rise very rapidly above the competence and understanding of those who direct the laboratory experiences of its neophytes.

4. *Operation*: Whose responsibility is it to support a cooperative program of experiences provided by two separate sets of institutions. An even more critical question is whether either public schools or colleges are likely to be able to put more of their budgets into this joint enterprise between now and 1970 during this period of exploding enrollments in teacher education? All the evidence now available suggests that high quality programs can be provided when both colleges and public schools can allocate sufficient staff time of committed and able professionals to their specific teacher education roles. But the evidence also clearly indicates that the cost in dollars, if realistically computed for a comprehensive program, would be a staggering addition to the budgets of most colleges and many public schools.

A further question which has received far too little attention is, what expenditures for operation would result in the greatest improvement in quality of programs? There simply is not enough evidence to give a good answer to that question. This writer submits the following list of priorities for financial support for the operation of student teaching programs in the hope that it will stimulate discussion, study and evaluation of trial programs:

Priorities in financial support for state programs:

1. Extension of public school administrative and supervisory service specifically designated for teacher education functions.
2. Professional books and materials for cooperating schools and teachers.
3. A substantial extra step on the salary scale for teachers reaching the highest level of preparation and experience in teacher-education activities.
4. Released time from non-instructional responsibilities for supervising teachers.
5. Released time from instructional responsibilities for supervising teachers.
6. Payment directly by the state to supervising teachers on a per student teacher basis. (Substantial payments on a graduated scale according to the teacher's attained level of training and experience in teacher education services could raise this item to a higher priority.)

A second series of items could also be included in support for operation but are not as easy to administer, to justify, or to set up on an equitable basis. These might include travel and other reimbursement for school and college personnel, reimbursement for student travel and added living costs, added budget for state departments of education for the coordination and improvement of teacher education activities in the schools. In any comprehensive package of state support it would be logical to include such additional items as appropriations for the cost of internships for teachers, administrators, and other types of specialized school personnel, and a two or three year program for the gradual induction of beginning teachers together with a planned sequence of in-service, professional growth activities.

STATE EFFORTS TO PROVIDE FINANCIAL SUPPORT FOR STUDENT TEACHING

Notwithstanding A. R. Mead's development of this idea in 1930, L. D. Haskew's article on state responsibility in 1949, and the numerous attempts in the various states since 1950 to appropriate funds for student teaching, no state has yet achieved an adequate level of support for the operation of these programs.

Georgia introduced an extra-legal, cooperative plan in 1950, which was well designed, including three levels of training and experience with corresponding levels of state payment, and it is still the best model available. Unfortunately, it has never been adequately financed to make the levels of training and experience effective. California began in 1951 paying each district $5 per semester hour earned in student teaching in that district, but without controls as to whether the money is used for any teacher education function or just put in the school general fund. More recently proposals for appropriations for reimbursement of supervising teachers have been presented to the legislatures in Minnesota, Texas, North Carolina, and West Virginia. The last three had such proposals under consideration this present year, with the one in Texas including a provision to modify the foundation program two years hence to include regular payment to supervising teachers. So far as this writer knows no one of these proposals has yet been passed.

In Oregon the legislature was requested to make a substantial appropriation to support some vital functions related to the Oregon Teacher Education Project which was itself initiated by a grant from the Fund for the Advancement of Education. One of the major emphases in this program, which included a variety of internship plans, was upon providing specialized preparation of both school and college personnel involved in teacher education laboratory activities.

One aspect of state support for student teaching is the very considerable investment in student teaching by the state supported institutions.

Unfortunately, this does not provide any support for the laboratory activities of private college students in the public schools. Furthermore, at the present time many state supported institutions are experiencing such exploding enrollments that these laboratory activities are even less well supported than formerly, instead of having funds for innovations and improvements. Both state and some private graduate schools provide courses for upgrading the skills of supervising teachers and often at little or no cost to the students. Many other minor aspects of the cost of student teaching programs are financed by the various types of colleges, but it is still a very significant fact that much of the special extra costs are paid for from special student fees; that is, travel costs for college supervisors and often students. Usually student teachers bear many of the additional direct costs themselves.

Based upon the evidence to date, the prospect for state financing of student teaching at a really adequate level is very limited indeed. Before substantial financial resources are made available in most states, it now seems very apparent that the need must be very well documented, more pilot programs must be set up, and many recognized educational leaders must be convinced of the need and their responsibility to assist in finding the resources.

FEDERAL FUNDS SOON TO BE AVAILABLE FOR STUDENT TEACHING

Direct federal aid for teacher education, including student teaching often has been proposed, and was included in the Quality Education Bill of 1962 and the Kennedy Omnibus Education Bill of 1963; but has never been passed in that form except for narrowly restricted types, as in vocational education. Federal aid for public schools has now been authorized by the *Elementary and Secondary Education Act of 1965* signed into law on April 11. This measure has five titles and all persons working in education should familiarize themselves with the provisions of these titles. The availability of federal funds to be appropriated will be discussed under the heading of the four areas of needed support discussed earlier in this article.

1. *Applied Research and Development*: Title V of the Act was designed to strengthen State Departments of Education and to provide them with resources for many special projects for the improvement of education within the several states. Substantial sums of money, with the exact amount determined in part by pupil enrollment, will be available to each of the states without matching funds for the next two years. In Section 503 of that Title there are listed 10 purposes illustrative of the types of activities for which grants might be made to state departments. Three of these are particularly significant for student teaching, and two of them for this particular type of need. These two read

as follows: "(1) educational planning on a statewide basis, including the identification of educational problems, issues, and needs in the State and the evaluation on a periodic or continuing basis of education programs in the State"; and "(6) programs to improve the quality of teacher preparation, including student teaching arrangements, in cooperation with institutions of higher education and local educational agencies."

In those few states in which the improvement of student teaching has been a major concern of the state department it would seem probable that state officials would include grants for the development of student teaching. In the other states, college and school officials interested in student teaching will have to take aggressive leadership to see that needed projects are carefully designed and receive favorable consideration in competition with all the other demands on this type of funds.

In several of the other eight suggested activities of Title V it would be possible to include activities vital to applied research and the development of student teaching. States would be authorized to use the funds for research and demonstration programs, discovering and testing new ideas, locating and evaluating curriculum ideas, studying ways to improve the legal and organizational structure, and the financing of education, publication of materials, and the dissemination of reports on all different types of studies.

The expansion of the program of Cooperative Research of the Office of Education is covered in Title IV, and it includes increased support, broadening of the categories of activities to be supported and the agencies which can receive grants, including for the first time professional organizations and almost any type of non-profit agency. For the first time, then, there will be substantial support available for all types of applied research and development in student teaching. *But teacher educators should be reminded that the available support will not seek out teacher education projects; rather teacher educators must design sound projects and apply for the funds in competition with all other types of requests.*

Construction of national and regional research facilities is also authorized in Title IV, with $100,000,000 set as the maximum cost over the next five years. These research centers may not be directly related to student teaching, but some of them are specified to be "experimental schools." It is proposed that the area of teacher education would be thoroughly explored, and, therefore, the laboratory phases of teacher education may in time receive considerable stimulus from this phase of the Act.

2. *Basic Research:* Faculty people interested in basic research related to student teaching have always been free to submit projects to compete for funds under the Cooperative Research Program of the Office of Education. Few projects have been funded, not because of limited need, but rather because the competition was very keen for the limited funds.

Relatively few researchers have been interested in designing projects in this difficult area.

There is every reason to believe that the amount of funds available for research in education will be steadily increased, and now the problem is precisely that of getting competent people to design sound projects and to continue applying until they have been successful in getting them funded. Teacher educators should be reminded that there are several possible directions for research in the areas of personal development and inter-personal relationships in the laboratory phases of teacher education which have already been funded by the National Institutes of Health, and specifically the National Institute of Mental Health. Private foundations should also be considered when seeking support for research.

The really significant point is that no longer can teacher educators sit back and complain that it is rather futile to apply for funds for the difficult and costly research in student teaching and related fields. Increasingly it can be said that any lack of research in these fields is a failure of the profession and not of the availability of funds. On the other hand, except for Title IV of the new act extending the Cooperative Research Program, it does not seem likely that this legislation will be a ready source of added support for pure research although there are numerous places in the other four titles where it may be included rather incidentally. There should be sufficient applications for applied research and related activities to preempt most of the available research funds in Titles I, II, III, and V.

3. *Preparation:* Provision is clearly made in Title V for the development of plans for programs, pilot programs, research on and analysis of these ventures for the preparation of personnel and the dissemination of the results. In addition, funds will be available for the development of state plans as well as for the operation of a variety of types as indicated in Section 503. "(9) training and otherwise developing the competency of individuals who serve state or local educational agencies . . . the initiation, improvement, and expansion of activities such as . . . (C) conducting institutes, workshops, and conferences (including related costs of operation and payment of expenses of participants)." If funds available under the above section are wisely used to gain experience in preparation procedures and the proper case for such is made later, it seems entirely likely that in subsequent years this type of appropriation could be increased substantially.

Presumably Title V of the present act pertains essentially to services for, and the preparation of, public school teachers and administrators, probably thus excluding support for the preparation of college supervisors and administrators of student teaching. Grants from Cooperative Research could be sought which would develop the rationale and the content for special institutes and related procedures for upgrading college personnel. If programs of this type cannot now be funded under existing regulations of NDEA, then, in a subsequent revision, this might be included, or achieved through other avenues of support. More graduate schools should apply for NDEA fellowship grants for advanced study in both college supervision and administration of student teaching. Title VII funds under NDEA are now being used in preparing teaching materials through the new media and this approach should be accelerated for upgrading both school and college personnel.

4. *Operation:* Except for planning, pilot programs, development, and dissemination very little operational money is included in any title of this act; that is, operational funds that would be allocated directly to programs of the laboratory phases of teacher education. However, those who worked with the Committees of Congress believe that in the future an expansion of Title V could include extensive matching funds for the operation of student teaching and other laboratory activities. Again, it will take intelligent leadership to utilize the resources available now, to gather the results of these efforts, and to make the case for the extended support.

On the other hand, there are some very interesting minor items of support for operations in the present act. Title II authorizes $100,000,000 for the purchase of books for school libraries for the use of pupils and *teachers.* The text of the law does not specifically include professional books for school staff libraries but neither are such uses ruled out. Each state is to develop a state plan under this title and this plan would set forth the agencies for making the choice of materials and the criteria on which the choices would be made. Therefore, in individual states it seems entirely proper for teacher education to propose that some of the best books and monographs on working with student teachers be made available to the teachers through their professional libraries in all schools that regularly receive student teachers.

Although Title V is the only one that specifically mentions student teaching, both Titles I and III are broad enough that numerous activities can be supported with these funds—activities which would have a direct bearing on, or make an excellent contribution to the laboratory phases of teacher education programs. For example, during the Congressional hearings on this bill witnesses presented a long list of activities now being carried on or considered as appropriate under this act. Some of those which might be related to, or used as laboratory situations in, a comprehensive program of teacher education include: in-service training for teachers, teachers' aides, supervisory personnel and full-time specialists for improvement of instruction, curriculum material centers for disadvantaged children, classes for talented children, special classes for physically handicapped, disturbed, and socially maladjusted children,

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pre-school training programs, enrichment programs on Saturday mornings, summer and day camps, work experience programs, and field trips for cultural and educational development.

SUGGESTED TOPICS FOR PROJECTS WHICH MIGHT BE PROPOSED FOR SUPPORT IN ANY STATE UNDER TITLE V OF THE ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965

Teacher Preparation with Special Reference to Student Teaching and Related Laboratory Experiences in the Public Schools

1. *Plans and studies*
   - a. Development of a *projected* set of *minimum standards* acceptable for institutional approval for student teaching and related experiences, including reasonable adaptation to the reactions of the leaders of the many various types of agencies.
   - b. Development, wide review, publication and dissemination of *a definitive description of a quality program of laboratory experiences for teacher education in the colleges and public schools* with adequate suggested variations for local conditions and colleges, together with an accompanying rationale for teacher education in the state. Minimum standards are necessary to eliminate questionable practices, but there does not exist in most states a description of a comprehensive "model or highly desirable" program and no rationale for laboratory experiences. Even the best in the literature has serious limitations on theoretical grounds and especially so in application to a particular state.
   - c. *A comprehensive survey of available laboratory facilities for teacher education in the public schools of the state* together with some sample field checking of the adequacy of such data, and the usability of newly identified facilities. Duplication and limited distribution to all interested parties.
   - d. *A comprehensive analysis of the plans used by the colleges in the state to compensate local school systems and their personnel for their service in teacher education.* Development of one or more suggested plans for a professional and realistic approach to this problem with proposals for patterns of organization, contractual relations and a state wide plan for proper financing of this entire operation within the public schools—publication and dissemination.
   - e. Development of a *comprehensive analysis of the roles and relationships of all types of personnel involved in the laboratory phases of teacher education.* Extensive review by people in all phases of teacher education followed by publication and dissemination.
   - f. *Development of a suggested draft for a comprehensive official bulletin on teacher education in the state.* Not a revision of cer-

tification standards, but resembling somewhat the content of the excellent ones in other states such as North Carolina and Kentucky—limited to the laboratory phases or could be broader in scope.

2. *Pilot Projects*

   In some of these cases the task needing support is the examination, evaluation, description, printing, and dissemination of a report on interesting pilot projects which are already an actuality. In others the task would be to design and initiate a project. The following is a brief list of types of projects which might be included:

   a. *A local Teacher Education Council* including college and public school representatives working to improve the laboratory phases of teacher education in an area in which only *one college* is situated and is placing students.

   b. *A local Teacher Education Council,* as above, in an area in which *several colleges,* including both publicly and privately supported, place students.

   c. *Demonstration public school districts* in the special field of laboratory experiences in teacher education. It would be desirable to have at least two or three different projects with districts of wide variety in type with several colleges cooperating in one or more projects, for example, several private colleges in one district, several publicly supported and private in another, several or all of the publicly supported in another, etc. The emphasis should be on the improvement of quality in all aspects of laboratory experiences such as observation, participation, student teaching, internships, the induction of new teachers, early employment at less than teacher status, etc.

   d. *An organized group of representatives of those responsible for laboratory experiences located in several geographically closely associated colleges.* The task is to study jointly the improvement of their programs, means of avoiding glaring variations and inconsistencies and the improvement of the local laboratory facilities in public schools through joint effort. This might serve as a pilot approach to the process for the whole state .

3. *Pilot training programs*

   a. Explore a variety of means of *upgrading the skills of cooperating school personnel in their teacher education functions.* For example, contract with one or more graduate schools to offer a credit course in the supervision of student teaching in areas of the state which never have access to such a course offering but where many student teachers are placed. The school personnel could be granted a full waiver of fees and given their books, or reduced rates for those items, or even some stipend for attending as suggested in Title V. Other approaches should be systematically explored and studied such as: short conferences, two or three day workshops, in-service programs in depth in a single system for all personnel, etc. One of the commoner present forms which needs further support and exploration is the invitational summer workshop or institute.

b. Several types of *state wide, and state regional work conferences* could be held to study special problems and practices such as might be identified in the projects of Section I or II. These could include representatives of all types of personnel in this aspect of teacher education, a narrower sampling or a single group to study a special problem.

c. *Explore* the use of short conferences, short workshops, or credit course workshops for *the upgrading of college personnel working in the public schools.* Many colleges have no facilities for this type of preparation and the rapid turnover and limited competence of college people who work in the public school is all too well known. These activities could be tried out on a state wide or regional basis with special emphasis on helping local people who are being employed for this purpose to become better qualified quickly.

4. *Special major projects with more developmental and research emphasis..*

a. *Use of New Media to supplement, make more effective, or even supplant some existing laboratory experiences.* The task is to inventory available materials in the state, available production facilities, to set up some pilot programs, to support selected use and evaluation of the widest variety of techniques and materials. All the evidence presently available indicates this is one of the best ways to improve the quality of professional laboratory experiences and to substitute the media for some of the least efficient procedures, such as extended early observation, and the limited opportunity for hordes of teacher education students to see superb teaching in their own special fields.

b. *Development of new approaches to the supervision of student teachers, participants, interns, and beginning teachers.* A number of new and very promising approaches to the process of supervision have now been developed in this country. These approaches include different theoretical designs, research backed schemes for analysis, new organizations of personnel, new techniques such as micro-teaching, and extensive use of media such as portable teletaping equipment. Some combination of the best of these might prove superior to the individual projects now in operation. Pilot centers could be used for carefully designed projects which would include extensive use of outside consultants in the all important preparation of personnel, together with continuous evaluation.

A PROGRAM FOR ACTION

What should each member of AST do about the problem of adequate support for student teaching? Obviously many different approaches are possible, but to this writer the following plan might be a good beginning.

1. Familiarize himself with all the provisions of the *Elementary and Secondary Education Act of 1965.*
2. Work to arouse the interest and support of the key school administrators and other influential leaders in education in their respective states. Such leaders need to be thoroughly committed to the importance of the cooperative effort in teacher education, and to the urgent need for well-rounded financial support for student teaching and related experiences.
3. Join with other segments of the profession to encourage respective state departments to include a variety of projects designed to study student teaching needs, develop state plans, organize pilot programs, and new working arrangements, together with the related research, evaluation, and the dissemination of the results.
4. State units and other organized groups should see that the proper state group or agency is directed to develop a set of minimum standards for student teaching, credit for which will be accepted for certification. Concurrently with the latter effort, each state should develop a proposal or a rationale for high quality student teaching. Based on these two approaches, each state should then devise a comprehensive plan for a high quality program, together with a realistic approach for the adequate financing of this plan. It may take several years to get support for such a plan, but without evidence from pilot programs, without facts and figures on needs and costs based on well documented experience, and most of all, without the united support of the profession, adequate financial support for both the operation of student teaching and comprehensive programs of preparation will not come for many more years.
5. All members of AST should be very alert to put the results of research to work in the design of experiences, programs, and their individual activities; while those at institutions with strong research capabilities should vigorously search for persons capable of directing research projects in this field; and together with such specialists, design proposals, and aggressively seek support for all types of research.

The Role of Professional Organizations

Professional organizations in the field of education can be said to have three major objectives: *professional welfare, professional improvement,* (of the members and their service) and *political-economic activities.* Teacher education organizations have seldom been especially concerned over *welfare* as have the state and national teachers' associations. The major emphasis of teacher education groups has always been in the *improvement* of the members of the profession and the services they render, and this effort must be continued and strengthened steadily.

Organizations with a primary interest in teacher education have very seldom ventured into the *political* realm. In our modern social and political scene, who will make the case for adequate financial support for teacher education and student teaching if teacher educators fail to exercise leadership? Those who are truly interested in bringing about a rapid upgrading of teacher education should work together and get a clear perception of the program they believe should be developed, and then rally the support of the entire profession of teaching to secure adequate support from the state and federal governments. There is no reason to believe that financial resources for the operation of student teaching or the preparation of the personnel involved will fall into our outstretched hands if we only stand and wait!

BIBLIOGRAPHY ON STUDENT TEACHING AND OTHER PROFESSIONAL LABORATORY EXPERIENCES

From July 1, 1963 to June, 30, 1964*

Prepared by the following students working with Miss Florence Stratemeyer in the field of teacher education at Teachers College, Columbia University:

Roger Holmes
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I. TEACHER EDUCATION IN GENERAL

American Association of Colleges for Teacher Education. *Freedom with Responsibility*. Seventeenth Yearbook. Washington, D.C.: The Association, 1964.

Contains the papers presented at the 1964 annual meeting, as well as reports of various committees of the Association. Among the major papers were Conant's presentation of the restricted state approved program approach to the certification of teachers, reactions to the Conant Report, a discussion of "Psychological Theory and Empirical Research for Teacher Education," consideration of the public image of teacher education, and needed change in teacher education to carry out the essential mission of education in America and to meet the requirements of a changing society.

Brickman, William W. "Conant, Koerner, and the History of Education." *School and Society*, 92:135-139, March 21, 1964.

Gives a critical reaction to the thinking and proposals by Conant and Koerner relative to the place of history of education in the teacher education program. The author questions whether "a general historian with an interest in education can do scholarly work in the history of education . . ." States that apart from a liberal education and a reliable knowledge of general history, the teacher of the history of education must have a comprehensive mastery of the history of education throughout the world from ancient times to the present, a good grasp of the related areas of educational philosophy and sociology, and experience in teaching.

Broudy, Harry S. "Conant on The Education of Teachers." *Educational Forum*, 28:199-210, January, 1964.

Points out that the most illuminating description in Conant's recent book is the one that concerns the power conflict dealing with teacher preparation; the educationist establishment versus "academic professions in the sciences and humanities and their influential collegiate alumni." Then turns to the chapters on certification focusing on recommendations intended to cure abuses. States that Conant reduces classroom teaching to "a craft like plumbing or carpentry, which can be learned by apprenticeship under a master who so certifies after a decent interval of training." Argues that the book is paradoxical, and that the key issue "is whether or not there is a body of knowledge of and about education that is worth the time of prospective teachers."

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*A few earlier references not found in previous bibliographies are included in this list.

Cartwright, William H. "Improving the Preparation of Teachers." *Educational Forum,* 28:187-197, January, 1964.

Describes what one staff member who worked with Dr. Conant in developing *The Education of American Teachers* considers to be the basic findings and recommendations: (1) To date, there is very little certain knowledge with which to justify many universal requirements in the preparation of teachers; (2) much research is needed, and it will take considerable time; (3) a great deal of testing and improving must be done to further teaching; (4) there is no justification at present for a "widespread, uniform trial"; (5) the state should require for initial certification only that the candidate hold a bachelor's degree from a legitimate institution; (6) organized professions should encourage and not mandate concerning the preparation of teachers, and give recognition to good practices; (7) institutions of teacher education, in cooperation with school systems, should have the major responsibility for preparation and certification of teachers; and (8) "The schools have a direct responsibility to participate in the pre-service education of teachers, to employ and assign teachers with quality teaching in view, to provide for the gradual induction of beginning teachers in the profession, and to provide the inservice teacher education peculiar to their communities and curricula."

Caswell, Hollis L. "The Education of Teachers in the Sixties." *Childhood Education,* 40:447-451, May, 1964.

Describes current programs for the preparation of teachers as being extremely diverse. Points out that the one element in teacher preparation that tends to be universal is the student teaching requirement; however, even this phase is more diverse than one would expect due to the vast differences in: (1) the length of time devoted to student teaching; (2) the kind of responsibility taken by the student; and (3) the quality and the amount of faculty guidance. Considers current trends and issues in teacher education, four of which are discussed: (1) the fact that teacher education is receiving increased attention, and stress is placed on the competence of the teachers who give instruction as the most important single factor in determining the quality of education; (2) the accreditation of the institution—whether this function should be delegated to a local, regional, or national agency may prove one of the major issues of the decade; (3) the emphasis on the need for a broad general education for the student preparing to become a teacher; and (4) the need for the professional educators to stress content in education—to deepen their scholarship, to examine with much more rigor the kind of preparation that contributes to superior teaching competence, and to organize and systematize the professional offering through a series of coordinated broadscale experimental studies.

Chase, Francis S. "Teacher Education for the Next Decade." *School and Society,* 92:140-142, March 21, 1964.

Points out that a good program of teacher education represents an extension of, and not a replacement for, liberal education. Teacher education should be built on elements which form the basis for understanding our own and other cultures; it should extend acquaintance with the best thinking of our own and previous ages; it should deepen the meaning of knowledge through application to a variety of teaching learning situations; and it should develop a spirit of speculative inquiry. Such an education is calculated to produce teachers who will motivate the learning process through a rich variety of approaches rather than depending on some rule of thumb method of slavish imitation of observed procedures. The good teacher couples a passion to know with an urge to enlist others in the discovery of new ideas. The teacher searches for ways to whet the appetites of young minds. Conditions essential for those who are to qualify as teacher-scholars: (1) intellectual curiosity; (2) assimilation of a substantial body of knowledge, together with methods of inquiry through which knowledge can be extended; (3) a certain amount of leisure and freedom from demands that swallow the day without allowing pauses for reading or reflection; (4) the cherishing of scholarship.

Combs, Arthur W. "The Personal Approach to Good Teaching." *Educational Leadership,* 21:369-387, March, 1964.

Analyzes good teaching for the purpose of planning effective programs for teacher education. States that traditionally programs have been built on the concept of "knowing" and, more recently, on the "competencies" approach. Describes the "self as instrument" concept as a more promising approach, and one that means that college teachers must concern themselves with persons rather than competencies. Defines the effective teacher as a unique human being who has learned to use his "self" effectively and efficiently for carrying out his own and society's purposes. Describes a perceptual view of good teaching as characterized by typical perceptual organizations in six general areas: (1) knowledge of his subject; (2) understanding of his frame of reference for approaching problems; (3) perceptions of others; (4) perceptions of self; (5) perceptions of the purpose and process of learning; and (6) perceptions of appropriate methods. Lists hypotheses regarding the perceptual organization of effective teachers. Emphasizes that the teacher education program must help each student find the methods best suited to him, to his purposes, his task and the peculiar populations and problems with which he must deal on the job.

Conant, James B. *The Education of American Teachers.* New York: McGraw-Hill Book Company, 1963, 270 pp.

(Note: Rather than a direct annotation of this volume, major articles dealing with this work are reported.)

Cottrell, Donald P. "NCATE Criteria and Procedures: An Analysis of Some Issues and Problems." *The Journal of Teacher Education,* 15:-148-164, June, 1964.

Discusses issues and problems pertaining to criteria of evaluation and their relevancy to the responsibility of the NCATE. The criteria are formulated in the areas of institutional objectives, organization and administration, student personnel programs and services, faculty, curricula, laboratory experiences, and facilities and instructional materials. Questions pertaining to the application of these criteria to a given institution are suggested and analyzed. This article is one of four papers given at the NCATE Conference of One Hundred. Other papers, also reported in this issue of *The Journal,* set forth the essential facts about NCATE, its purposes and policies and the major issues and arguments, its structure and finance.

Cyphert, Frederick R. and M. Karl Openshaw. "Research in Teacher Education: Practices and Promises." *Theory Into Practice,* 3:26-30, February, 1964.

Reassesses research needed in teacher education. Reveals that the extant research in teacher education is neither extensive nor profound, that it fails to take into account the findings of educational research and often is so narrowly defined as to exclude from study the most important elements of the education of teachers, that it has been approached in an unimaginative fashion and with no communicable conceptual frame of reference. Predicts that there is about to be a renaissance of teacher-education research in terms of its scope, significance, methodolgy, and utilization. Suggests that a promising approach is the careful analysis of selected dimensions of the teaching act itself, through study of teacher behavior in classroom settings. Reviews recent studies of teacher behavior and identifies the formulation of logically and empirically validated theories of teaching as an essential task to be completed. Recommends approaching research in teacher education from a theoretical, methodological, or heuristic point of view.

Gudridge, Beatrice M. "Axioms and Issues in Teacher Education." *Minnesota Journal of Education,* 44:8-9, January, 1964.

Summarizes the NCTEPS position on the selection of teachers, their preparation, their continuing education, the development and maintenance of standards of competence, and the translation of theory and research into practice. Discusses the similarities and differences between this position and that of Dr. Conant on the preparation of teachers.

Halliwell, Joseph W. "A Review of the Research Comparing the Teaching Effectiveness of Elementary School Teachers Prepared in Intensive Teacher-Training Programs and in Regular Undergraduate Programs." *The Journal of Teacher Education,* 15:184-192, June 1964.

Reviews the findings and notes the limitations of investigations comparing the teaching effectiveness of teachers prepared in intensive programs and regular undergraduate teacher education programs. "In the light of the facts that research on two different types of emergency programs was reviewed, that in the one study in which the socio-economic status, intelligence, and adjustment of the two groups were examined the findings indicated that the experimental group was superior in all three of these dimensions, that the experimental designs of the investigations left much to be desired, it is interesting to note that in all four studies examined the regular teachers received better ratings than did the experimental teachers: in two, they were significantly superior; in one, no tests for statistical significance were made; and in another, the superiority of the regular teachers was not significant." Points to the need for adequately designed, longitudinal, experimental studies of the efficacy of intensive teacher-preparing programs.

Heil, Louis M. "Personality Variables: An Important Determinant in Effective Elementary-School Instruction." *Theory Into Practice,* 3:12-16, February, 1964.

Reviews implications of studies done at Brooklyn College which have had as their major underlying hypothesis the idea that different kinds of teachers are effective in different ways with different kinds of children. It is the contention of the author that any attempts to increase the effectiveness of elementary-school instruction must consider the effect of the varying personality configurations of teachers or prospective teachers and those of the children. Suggests that variables of teacher-learner personality should be considered both in teacher education programs and in the selection of teachers for particular schools. Recommends that in teacher-education programs, an effort should be made to determine the major personality configuration of each student, including his motivation for becoming an elementary-school teacher. Discusses three general types of teachers—self-controlling, self-accepting, self-effacing—and suggests different emphases and experiences important for prospective teachers of different personality configurations.

Humphry, Betty J. "A Survey of Professional Education Offerings in NCATE-Accredited Institutions." *The Journal of Teacher Education,* 14:406-410, December, 1963.

Reports a questionnaire survey of courses and basic textbooks used in the professional education offerings of 248 NCATE-accredited institutions in forty-six states. One hundred forty-one institutions require work in educational psychology of all teacher candidates. A course in human growth and development is a requirement in forty-seven colleges, and one in human development in twenty-nine institutions. The basic textbooks for educational psychology numbered forty-nine different listings. Courses relating to the "societal" foundations of education are required in 197 of the 248 institutions. In seventy-five of the 248 colleges, introduction to education is required of all students. A number of institutions require courses in either introduction to education or foundations of education, plus a course in philosophy of education. Some require history rather than philosophy of education. In other instances history and philosophy of education (as a combined course) is sometimes coupled with a required course in introduction to education or principles of education. The pattern of basic textbooks used in these areas is similar to that of psychology courses—in terms of number, variety, and overlap of books used. The number of different professional course titles might "conservatively be estimated at 200." The use of the same basic textbook for a variety of courses raises questions concerning the uniqueness of some courses.

Kneller, George. "Panorama of Teacher Education." *Journal of Higher Education,* 35:276-282, May, 1964.

Reviews the Year Book of Education, 1963, titled *The Education and Training of Teachers.* Containing fifty-five essays, the first section—historical and theoretical—considers the nature of the ideal teacher and describes teacher education programs in various countries. Tendencies to unify the preparation of prospective elementary and secondary school teachers is a central focus of the second section. Section III places teacher education in its social and economic context. Recruitment, level of preparation, and nature of programs are related to industrialization, urbanization, minority and subcultural group relations, and ideological differences. In the last section some postwar developments in teacher education are considered.

Kniseley, V. V. "Inevitable Obsolescence?" *Theory Into Practice,* 3:30-34, February, 1964.

Suggests specific approaches to be taken in preservice education and in-service practice to ensure the dissemination of new knowledge and its translation into teaching practice. Points out that it is critical for the prospective teacher to realize the extent to which increasing reliance is being placed upon his individual resources. States that the teacher is much less disposed to obsolescence in practice if he acquires the following knowledge in preservice education: knowledge of the purpose of the school; knowledge of how to teach and what to teach; broad knowledge of the curriculum; and attitudes and skills for effecting change. States that in-service practice for the prevention of obsolescence depends upon the organization for which the teacher works. Emphasizes that this organization must create a climate for change, provide opportunity for change within the individual school, create a broken-front pattern, and provide leadership.

Koerner, James D. "Proposals for Radical Reform." *Phi Delta Kappan,* 45:7-10, October, 1963.

Analyzes the Conant report on teacher education and is "delighted with this very imperfect, incomplete, inconsistent, sometimes impressionistic, often wooly-minded but courageous and apocalyptic report." Notes Conant's emphasis on "the importance of creating an integrated methods and practice teaching program staffed by 'clinical' professors who are 'capable of judging every aspect of teaching,' who 'practice' their trade regularly, and demonstrate in concrete teaching situations." Points out gaps in the report including the failure to examine graduate degrees in education, the imposition of arbitrary requirements of many kinds on the teacher education programs, the overrating of the restrictive influence of certification laws, the recommendation that NCATE be "only" advisory and other "minor" flaws. Suggests Conant "has made a sensible analysis of the worst of our problems and has lent the weight of his prestige to a series of recommendations that at the very least should dispel the remaining lethargy of both the profession and the body politic."

Laird, Dorothy C. S. and Helen C. Ellis. "Doctoral Studies on the Education of Teachers and Administrators, 1961-62." *The Journal of Teacher Education,* 14:337-345, September, 1963.

Presents a classified listing of doctoral studies in teacher education: provision and administration of teacher education; education of administrators; preservice education—objectives, curriculum, practices; education of teachers for particular subject fields; student teaching and other preparatory experiences; students of education—characteristics, achievement, prognosis; personnel services—recruitment, selection, placement; beginning teachers and administrators—problems, induction, follow-up; inservice education; evaluation of preparation; teacher education in other counrties.

Liggitt, William A. "An Evaluation of General Education in Elementary Teacher Preparation." *The Journal of Educational Research,* 57:156-159, November, 1963.

Reports the findings of a two-year study begun in 1957 to evaluate the general education achievement—in social studies, science and mathematics —of sixty-four students in the elementary education curriculum during their first two years at Jersey City State College. Standard test scores were used to measure student achievement at the beginning of their freshman year and at the close of the sophomore year, and achievement test scores were compared to grade point averages and to a measure of general capacity to achieve in college. The SCAT (Form 1A)—as a measure of general capacity of students to undertake work at the next higher level—was administered in March 1957 as part of the college admission procedure. The STEP (Level 1 Form 1A) in social studies, science and mathematics was administered in October 1957, and repeated (Form 1B) in April 1959. The STEP series was selected as the instrument to measure the broad outcomes of general education. Grade point averages for twelve semester hours each in social science and science and six semester hours in mathematics were computed and used as a measure of actual achievement in general education. The grade point average for sixty-five semester hours college work (forty-eight of which is general education) also was used as a measure of actual achievement. The purpose of the study was three-fold: (1) to compare general capacity in college with actual achievement in general education in the first and the fourth semester; (2) to compare actual achievement in general education in the first semester with actual achievement in the fourth semester; and (3) to determine the relationship between standardized test scores and course grades as a measure of college capacity and general education achievement. The data indicate that: (1) slightly more than half the students achieved at their expected capacity in social studies, mathematics and science; (2) the proportion of students achieving above their expected capacity was 14 per cent in social studies, 9 per cent in mathematics, and 5 per cent in science; (3) at least one-third of the students in social science, science and mathematics were achieving at less than their expected capacity; (4) the group of sixty-four entering freshmen during four semesters achieved a statistically significant mean gain in social studies and science but did not achieve significantly as a group in mathematics; and (5) the standardized measure of achievement in the fourth semester (second STEP test) had a medium relationship to grade point averages in social studies and mathematics but a low relationship to grade averages in science.

Nelson, Jack L. and Gertrude A. Robinson. "Interdisciplinary Education for Teachers." *Improving College and University Teaching*, 11:101-102, Spring, 1963.

Stresses the need for active involvement of many departments within a college or university in the preparation of teachers. Suggests that one direct way to demonstrate interdisciplinary relationships and team teaching is to develop team taught classes at the college level. Outlines factors to be considered in the framework of such a course, describes types of grouping to be used, and suggests that students be involved in the planning and execution of the program for the insight it will provide them for situations they may find in future teaching assignments. Points out methods by which the program can be evaluated including achievement of the students, student reactions to course structure and content, and faculty reaction.

Preston, Ralph C. "Education Graduates View Education and Academic Courses." *School and Society*, 92:233-237, Summer, 1964.

Reports the results of a questionnaire survey of the attitudes toward education courses held by 108 of the 175 graduates of the school of education of an eastern university—recipients of baccalaureate, masters' and doctoral degrees. The respondents were asked to rate both education and academic courses on a five-point scale with respect to the following nine attributes frequently associated by critics with education courses: undesirable content repetition, thin or inadequate content, overemphasis on teaching techniques, overemphasis on theory, unsuitable organization of content, uninspiring and dull, shallow and superficial, too much lecturing, too much discussion. Academic courses were rated higher than education courses on eight and significantly higher on six items. With two exceptions, the ratings of education courses were more variable and, in several cases significantly so. "This reflects the tendency of Education courses to elicit a larger number of extreme scores at the lower end of the scale. . . While the differences between the ratings of education courses and academic courses were generally significant, the absolute differences were small. Moreover, in answer to the question, 'Do you believe you could teach as well without any courses in Education as with them?' 82% responded with 'No,' 12% with 'Yes,' and 6% were undecided." The quality of the professor was named as the most critical factor. The implication of these results for student teaching appears to be a need for students to gain more experience in analyzing theory in relation to alternatives of classroom interaction with children.

Ryans, David G. "Teacher Behavior Theory and Research: Implications for Teacher Education." *The Journal of Teacher Education,* 14:274-295, September, 1963.

Summarizes and synthesizes teacher behavior patterns reported by researchers interested in a variety of topics, and lists the limitations and implications of this research for teacher education. Information useful to teacher education programs gained from research on teacher behavior is that concerned with (1) the "behaving styles" of teachers; (2) the relationships involved between age, experience, and other characteristics of teachers as they interact with different behaving styles, abilities-capacities, and retrievable information; (3) the methodology of studying teacher behavior; (4) the nature of teacher attitudes and behavior in particular situations; (5) teacher emotional characteristics and their relation to teacher inputs and teacher behavior; (6) the logic of the teaching process itself; (7) the influence of teacher behavior on pupils. Provides an overview of Ryan's conceptualization of teacher behavior as an information system.

Scherwitzky, Marjorie. "Attitudes of Students Toward Education Courses at the State University College, Oneonta, New York." *The Journal of Teacher Education,* 15:204-209, June, 1964.

Reports the results of an investigation of the attitudes of the student body at Oneonta toward education courses. These stated attitudes were then compared to recent criticisms of education courses. Fifty-seven of the ninety items on the attitude scale elicited favorable responses from the students in all classes. In addition six items about content of the courses, four about usefulness, two about education students, and eight about instructors had favorable responses from all except seniors. Students in all classes except the freshman indicated that course content was more repetitious than that of other courses, that there was not a good balance of theory and practice, and that the courses did not help them to gain confidence to face a group of children. The study does not substantiate the claim of relationship between scholastic standing and negative attitude toward education courses. Nor do the responses uphold the contention that education courses are not an essential part of teacher preparation and that time spent on them would be better spent on the liberal arts. Students in all classes felt that the courses did not attract less able students; however all classes, except the freshman, felt that a poor student could "get by" in education courses. Students in all classes except the senior felt that education courses were generally well taught.

Schutz, Richard E. and Robert L. Baker. "Programed Learning and the Teacher Education Curriculum." *AV Communication Review*, 11:253-259, November-December, 1963.

Examines some implications of the principles and procedures of self-instruction for the planning of teacher education curricula. Suggests that in a self-instructional curricular context objectives are specified as terminal behaviors, all instruction is designed as a hierarchial sequence of experiences capable of achieving the over-all objectives, and responses relevant to a cross-section of classroom situations are programed and reinforced. Such a curriculum allows the student to begin student teaching having already experienced simulated and controlled teaching situations. Emphasizes the need for student teaching experiences to be more carefully sequenced, with the student receiving greater feedback concerning the effectiveness of his efforts. Describes recent curriculum modifications in elementary psychology, educational psychology, and tests and measurements at Arizona State University which are consistent with the principles presented in the article.

Smith, B. Othanel. "The Need for Logic in Methods Courses." *Theory Into Practice*, 3:5-8, February, 1964.

Points to the need in methods courses to develop understanding of the logic of teaching as well as understanding of the psychology of learning. Suggests that logical processes such as defining, explaining, evaluating, substituting, classifying, comparing, be explored in relation to the various fields of instruction. "Although there will be common logical elements in the different ways of explaining, there is enough difference in the performance of the explanatory operation in various content areas to justify individual treatment in each area."

Stiles, Lindley J. "Dr. Conant and His Critics." *Teachers College Record*, 65:712-717, May, 1964.

Analyzes the book, *The Education of American Teachers,* and the reactions to it that appeared as reviews and articles. Views the volume as dealing with the politics of teacher education and the central and most controversial recommendation to be to "encourage college and university faculties to find better ways of preparing teachers by freeing teacher-education programs from externally imposed prescriptions and internal control by educationalists." Indicates positions of different reviewers of the book on recommendations made by Conant, particularly the proposals relating to NCATE. Summarizes subsequent efforts of Dr. Conant and his research staff to make clear the assumptions which underlie their recommendations.

Stiles, Lindley J. "Role of Liberal Arts Colleges in Teacher Education." *Educational Forum*, 28:171-177, January, 1964.

Reviews the struggle for the control of teacher education between liberal arts colleges and teachers colleges, and finds: "(1) teachers have not been as well prepared as they must be; (2) the quality of elementary and secondary schools has suffered; (3) institutions of higher learning have been weakened by internal strife; and (4) public confidence in education —at all levels—has decreased." Suggests six specific roles of the liberal arts college in teacher education: (1) provide an atmosphere that demonstrates "the value of scholarship and the importance of excellence in teaching"; (2) keep course content attuned to the times; (3) lay the foundation for continuing scholarship in the field; (4) have only pedagogical courses of quality; (5) help in strengthening the educative process in the elementary and secondary school; and (6) help in the selection and recruitment of teachers. Recommends that the highest priority in teacher education should go to the preparation of elementary school teachers.

"A Symposium on James Bryant Conant's *The Education of American Teachers.*" *The Journal of Teacher Education,* 15:5-49, March, 1964.

Presents in symposium form the reactions of ten professionals, from different areas within the field of education, to Conant's *The Education of American Teachers.* Included are the reactions of public school and college personnel, of representatives of professional organizations, of educationists and academicians. Each presents his views based upon his background and experiences in the profession and the results contribute new "food for thought" in approaching any discussion of the book and its impact on teacher education.

Whitelaw, John B. "Targets for Teacher Preparation." *School Life,* 46:11-13, January-February, 1964.

Reports on the development of fifth-year preservice teacher education programs and cites five outcomes of these programs which hold implications for the improvement of teacher education programs in general. These outcomes suggest the following goals: (1) four years plus an accumulated fifth year as the basis for full certification of elementary and secondary school teachers; (2) a paid internship in the fourth undergraduate year to replace current programs of student teaching; (3) the integration of undergraduate professional content into the internship period; (4) professional status and extra pay for the master teachers who supervise interns; (5) assumption of responsibility for subject matter competence by the subject-matter department of each student teacher.

Wirth, Arthur G. "Challenging Students of Teaching." *Improving College and University Teaching,* 11:108-109, Spring, 1963.

Discusses the college or university teacher's own enthusiasm for teaching and his underlying meaning-seeking as providing a way to interest more able students in a teaching career. Suggests that courses need to be organized around significant themes that students sense are concerned with the reach for significant understanding. Within the course students need the opportunity to develop on their own through quality reading and self-directed study projects, and by sharpening their tools of intellectual analysis. Expresses limitations placed on college instructors by difficult first-year teaching assignments, lack of a good intern program during the first three years of professional work, and a jaundiced view of the work of education departments by colleagues in other departments.

II. STUDENT TEACHING IN GENERAL

Andrews, L. O. *Student Teaching.* New York: Center for Applied Research in Education, 1964. 106 pp.

Reviews history and literature pertaining to professional laboratory experiences; analyzes programs and problems in student teaching, and considers factors critical to the development of future programs in student teaching. Stresses need for (1) an interrelated sequence of direct experiences as part of a five-year preservice program of teacher education which is followed by an internship; (2) specific preparation of supervising teachers and college supervisors for work with student teachers; (3) cooperation by schools, colleges, and state education departments in formulating and implementing student teaching and internship prgorams; (4) analysis of the potential of new media for the instruction and supervision of student teachers, and (5) research on the nature of effective teaching which will illuminate the dimensions and qualities of a sound program of student teaching.

Andrews, L. O. "State and Federal Aid for Student Teaching—Now?" *The Journal of Teacher Education*, 15:165-174, June, 1964.

Identifies issues, problems, and some current practices in state and federal aid for comprehensive state programs of student teaching. Critical issues are believed to be those of (1) the internship, (2) responsibility for supervision, (3) standards for professional laboratory experiences, (4) the legal status of student teaching. Enactment of federal aid for student teaching may provide matching funds for student teaching in all subjects and levels and thereby strengthen this area of national concern in teacher education.

Crow, Lester D. and Alice Crow. *The Student Teacher in the Elementary School.* New York: David McKay Company, 1965. 480 pp.

Crow, Lester D. and Alice Crow. *The Student Teacher in the Secondary School.* New York: David McKay Company, 1964. 466 pp.

Companion books that provide the student teacher a general introduction to student teaching. Progresses from orientation to student teaching through planning, classroom management, learning needs and teaching approaches, utilization of teaching aids, evaluation of pupil progress, and relationships with colleagues. Offers specific suggestions concerning problems that students find in their professional laboratory experiences, indicates the various functions of people in and outside the school whom the student must meet, and the values to be derived from good relationships with supervisors, cooperating teachers, administrators and parents.

Del Popolo, Joseph A. and Maurie Wilson. "Student Teaching and the Role of the Public Schools." *New York State Education*, 51:14-16, March, 1964.

Stresses the dual responsibility of the college and the public school in the student teaching experience and delineates how each agency benefits as a result. The public school provides a realistic situation in which the student refines his competencies, experiments under the watchful eye of a professional, casts off those techniques which are ineffective, identifies with the teaching profession, and experiences firsthand community living in a new setting. Based on surveys made in public schools in direct contact with student teachers throughout the states of New York and Pennsylvania, advantages for the public schools include the following: (1) a form of inservice education through more time spent in planning by the supervising teacher, an attempt by the supervising teacher to be a model teacher, encouragement for the supervising teacher to read professional books and to seek critical evaluation of his own teaching; (2) the upgrading of the classroom program through an adoption of some of the methods used by the student teacher, the making of more teaching time available to the pupils, the contribution to the personal welfare of the pupils made by the student teacher, the development of a new point of view about some children because of new insights brought by the student teacher; and (3) the helpful participation of the student teacher in non-teaching obligations.

Devor, John W. *The Experience of Student Teaching*. New York: The Macmillan Company, 1964. 358 pp.

Emphasizes concrete examples and suggestions for student teachers at both the elementary and secondary school levels based on three major activities of the student teaching experience: (1) observation, (2) participation, and (3) teaching. Serves as a guide to student teachers in planning for teaching, in understanding human relationships in the teaching act and in general classroom management. The content of the book is based on personal experiences of student teachers and many direct quotations from self-evaluations are used to support major points.

Gibert, James M. "Is Student Teaching a Waste of Scholarship?" *Liberal Education*, 49:466-474, December, 1963.

Suggests that the undergraduate student teaching course is neither a wise use of a fourth of the student's senior year nor the most effective means of providing classroom experience. Cites lack of research which supports a relationship between successful student teaching and a successful teaching career. Proposes that the senior year, as the time when the student's most fruitful intellectual efforts may be expected, would be more profitably devoted to fulltime academic study. Charges that, although the college grants academic credit for student teaching, the college does not provide adequate instruction or regulation of the student teaching experience and is, in fact, merely serving as an agent of the state departments of education. More selective screening of students, graduate internships, or first-year supervision by the local school system are suggested measures to supplant current student teaching programs.

Hunter, Elizabeth and Edmund Amidon. *Student Teaching: Cases and Comments*. New York: Holt, Rinehart and Winston, Inc., 1964. 158 pp.

Contains case studies of college students preparing to teach at all levels, kindergarten through high school. Situations depicted are typical of those encountered by student teachers before, during and after student teaching. Each case is followed by comments that clarify problems involved, raise pertinent issues and provide thought-provoking questions intended to lead toward alternate courses of action. The book is designed to help student teachers grow in their understanding of a variety of educational and professional problems while assisting with the improvement of specific teaching skills.

Steeves, Frank L. *Issues in Student Teaching*. New York: The Odyssey Press, Inc., 1963. 324 pp.

Considers the case study as a method of teaching and learning and presents a group of cases dealing with various aspects of student teaching. Suggests preliminary reading from a selected bibliography relevant to the case, some positive action by students on the content of each case, and finally problems for analysis and discussion both during and after the reading of the case study. The four groups of cases center on problems relating to basic concepts and patterns in supervised student teaching, relationships during student teaching, administrative and supervisory problems, and placement and follow up. Five appendices include a working bibliography of major sources in the student teaching field, a cross index to the types of problems treated in the book, and a glossary of terms.

Thompson, Michael L. "Identifying Anxieties Experienced by Student Teachers." *The Journal of Teacher Education,* 14:435-439, December, 1963.

Reports a study designed to identify anxieties felt by student teachers, both in anticipation of and during student teaching. A total of 125 students (47 female elementary school, 25 female secondary school and 53 male secondary school) responded to a list of thirty-five types of anxiety. Anxiety in anticipation of student teaching was checked more than twice as often by all groups as during the student teaching period itself. The greatest sources of anxiety were the supervising teacher's expectations and mastery of subject matter in the teaching field. Lesson plans, pupil reaction, standards of teacher conduct, inability to answer questions, and problems of discipline were also matters of real concern. More anxieties originate in what has been heard or imagined than from any other source.

III. ADMISSION AND ASSIGNMENT TO LABORATORY EXPERIENCES

Fabiano, Gerald. "The Student Teaching Dilemma." *Improving College and University Teaching.* 11:105-107, Spring, 1963.

Identifies five factors responsible for faulty assignment of student teachers: (1) allowing the student to select a school system of his choice; (2) length of student teaching assignment is often too short; (3) along with student teaching, students sometimes carry full course load; (4) often student teachers study lesson planning at the same time they are doing student teaching; and (5) usually the college does not know the cooperating teachers selected to work with student teachers. Recommends three solutions: (1) the student teaching program be enlarged to encompass five full days for a complete semester; (2) schools to which student teachers are sent be selected by the student teaching office; (3) students complete course work before beginning their student teaching experience. Suggests good teachers are developed by seeing good teaching and experiencing the joy and satisfaction derived from such endeavor.

Lemke, Donald A. "A Total Program for Teacher Recruitment." *Clearing House,* 38:26-28, September, 1963.

Suggests a six-point program for the recruitment of prospective teachers (1) starting with a teacher-selection committee in every high school to secure the best possible students and (2) insuring that this group will have the opportunity to enter college by providing state and local scholarships. The next four steps would occur while the student is in college. (3) A compulsory year of speech in the freshman year; (4) an evaluation in the sophomore year of college, by advisor and student, of the individual's capabilities as a prospective teacher; (5) for those who decide to remain in the teaching profession a period of practice teaching in the second semester of their junior year; and (6) the college to arrange for senior students to be used as substitute teachers in the local schools. Points out some of the practical problems involved with this program and suggests several avenues of approach.

Miller, Lebern N. "Evaluating Teaching Personality Before Student Teaching Begins." *Peabody Journal of Education,* 41:49-54, July, 1963.

Reports the results of a questionnaire sent to twenty-five colleges having a personality evaluation program for teacher education candidates. More than one-half of these institutions reported a formal and written procedure for identifying and redirecting education students with teaching personality problems. In most instances, this evaluation was initiated or carried out by the instructor of the freshman or sophomore professional experience course. The final decision on the disposition of a student-case usually was made by a committee. The number of students redirected from the teacher education curriculum appeared small.

Shuman, R. Baird. "Should Prospective Teachers Receive Psychiatric Clearance?" *Clearing House,* 38:173-175, November, 1963.

Suggests that every prospective teacher be required to receive psychiatric clearance before going into student teaching—a one hour interview, early in the Junior year, with a psychiatrist appointed by the teacher preparing institution. Should anyone not be given clearance, he should be "required to complete a course of treatment prescribed by the school-appointed psychiatrist, whose decision should, on request, be subject to review by a qualified psychiatrist of the student's choosing." When the student has successfully completed the treatment, he would receive clearance for student teaching and his treatment would be considered privileged information. The author urges that the first session be subsidized by the teacher preparing institution, perhaps with subsidy for low or moderate costs if treatment is required.

IV. AIMS AND PRINCIPLES GOVERNING LABORATORY EXPERIENCES

Mercer, Walter A. "Teacher Education Laboratory Experiences." *Improving College and University Teaching,* 11:110-111, Spring, 1963.

Reviews points of view expressed by educators in professional literature regarding the significance of laboratory experiences and off-campus student teaching. Challenges persons connected with the administration of the student teaching program to implement the principles suggested by the authorities.

V. CONTENT AND PATTERN OF PROFESSIONAL LABORATORY EXPERIENCES

Briggs, Leslie J. "The Teacher and Programmed Instruction: Roles and Role Potentials." *Audiovisual Instruction,* 9:273-280, May, 1964.

Describes *open*-loop systems such as textbooks, lectures, and films as not having enough feedback. Suggests that the teacher's role in *closed*-loop systems should increase in efforts to help the student incorporate the information into his response system. Films and television in adjunct with programmed instruction: (1) remind the student of information already presented, (2) stimulate the student to respond, (3) provide feedback to the student, (4) provide feedback to the teacher on areas needing his further attention, (5) provide feedback to the programmer on revisions needed. Recommends the following as changes needed in the preparation of teachers: (1) preparation of teaching packages which would present, in capsule form, the most dependable facts; (2) preparation of practical experiences, such as a one-hour lesson designed to teach two children the same thing at the same time, by group methods; (3) preparation of the same one-hour lesson by the prospective teacher for presentation to larger groups, using any means appropriate and available; and (4) supplement real-life experiences with the use of all the above.

Brown, Don W. "Honors for Student Teaching." *The Journal of Teacher Education,* 14:366-371, December, 1963.

Cites a need for honors programs in preservice teacher education to recognize excellence in academic performance and potential for the development of superior competencies in teaching. Evidence presented by upper division college students for admission to the program might include consideration of (1) faculty recommendation, (2) academic competence, (3) special competence in early professional orientation, (4) ability to write and to discuss, (5) supervisory work experience with children and youth, (6) general maturity and stability for teaching. The faculty committee responsible for the operation of the honors program in teacher education might be composed of the coordinator of student teaching, two members of the education department, a representative from the general college, and one member of less permanent appointment to the committee. Describes the initiation of such a program at Western Washington State College.

Cole, Tom J. "An Experience in Teacher Training." *Peabody Journal of Education,* 41:144-146, November, 1963.

Discusses the advantages and disadvantages of the junior student teaching block comprised of eight semester hours of theory courses—educational psychology, secondary school curriculum, high school methods—and eight semester hours of observation and student teaching. During the last week of their experience, the students were asked to list their evaluations of this block of work. At a later class discussion, two lists of common agreement were formulated. A brief summary of the advantages and disadvantages may be stated as follows. Most students viewed the block program as the most interesting and worthwhile semester of their college career—closer personal relationships allowing for consideration of individual differences, better correlation of work in various areas, better spacing and relating of assignments, more effective over-all evaluation of the student. Students were equally firm in recommending that the block should not be under the supervision of one individual—student gets only one instructor's philosophy of education, greater chance of boredom if a personality clash, tendency to use a single teaching method.

Henry, Marvin A. "The Relationship of Difficulties of Student Teachers to Selected Aspects of the Professional Sequence of Education." *The Teachers College Journal,* 35:47-49, November, 1963.

Compares selected difficulties experienced by student teachers with the times at which methods courses in the professional education sequence were completed. The data of the study were secured from the questionnaire responses of 344 student teachers and their supervising teachers to sixteen difficulties most often experienced by student teachers. Analysis of the data revealed that the three difficulties most frequently reported by the student teachers were: (1) development of desirable pupil behavior; (2) lack of confidence; (3) communication of ideas. Supervising teachers more frequently identified difficulty in guiding learning activities. There appeared to be "little relationship between the number, type, and degree of intensity of the difficulties experienced by student teachers and the time when courses are taken in academic methods."

Ornstein, Allan C. "Teacher Training for 'Difficult Schools'." *Journal of Secondary Education,* 39:172-173, April, 1964.

Points out that the "blackboard jungle" situation may be a result of unqualified or frightened teachers; many teachers from middle-class families have no understanding of underprivileged children's environment. Suggests that starting with the Junior year, prospective teachers who express a willingness to teach in "difficult" schools should serve one afternoon each week as a 'Big Brother or Big Sister," and thus have opportunities for direct experiences. Each term thereafter, the student would be assigned a different underprivileged child to vary the experience. Students would be assigned to a difficult school for student teaching, and "be permitted to teach one class for an entire term."

Payne, Chester J. "Experiment with a Student Teacher." *Education,* 84:-170-173, November, 1963.

Describes the activities of a student teacher assigned to work in a school-wide situation under the supervision of the principal for a full-day, nine-week period. The student was assigned to any tasks and situations in the building which were thought to be beneficial to him. The program attempted to provide experience with (1) curriculum materials at all grade levels, (2) children and teachers at all grade levels, (3) the administrative duties necessary to effective school operation, (4) the functions of various school personnel. The qualifications and responsibilities of the principal and the student teacher which were considered necessary to the success of this program are defined as follows. Important qualifications and responsibilities of the principal include: (1) to be genuinely interested in teacher education, (2) to take the responsibility for day-to-day guidance and supervision, (3) to tactfully incorporate the student into the life of the school. The qualifications and responsibilities of the student teacher include: (1) successful experiences in the first three quarters of his student teaching; (2) a superior student and a confident one, ambitious in seeking out learning situations; (3) a mature student having poise and social ease.

Wilhelms, Fred T. "Exploring New Paths in Teacher Education." *Theory Into Practice,* 3:12-16, February, 1964.

Describes a five-year exploratory project at San Francisco State College in which a growing pattern of direct experience was woven into the fabric of the entire professional program. Varied "little" experiences over several semesters (three for secondary and four for prospective elementary school teachers) took the place of the traditional last semester student teaching experience. Effort was made "to use the experiences students were having as the basis for their theoretical studies, opening their eyes to problems, providing them with realities to consider as they studied their psychology and pedagogy." On campus one continuing, problem-centered seminar was substituted for the usual separate courses in the professional sequence, with the content emerging from the experiences and needs of the students. Results are termed as "impressions" rather than findings, since this was not a controlled experiment. Reports that students learned about the same things in about the same amounts as those in the "regular" program. Faculty teams report great satisfaction, with generally positive attitudes on the part of students. Emphasizes continuity of student groups with a faculty team as very important to the success of the project. Reports that the core curriculum in professional education aimed at in this project has been modified and adopted as one of two regular programs by the Department of Secondary Education at San Francisco State College.

See also:

Allen, Arthur T. and Dorothy I. Seaberg. "Teachers-in-the-Becoming." (Section VI)

Halliwell, J. W. "A Review of the Research Comparing the Teaching Effectiveness of Elementary School Teachers Prepared in Intensive Teacher-Training Programs and Regular Undergraduate Programs." (Section I)

Lemke, Donald A. "A Total Program for Teacher Recruitment." (Section III)

Schutz, Richard E. and Robert Baker. "Programed Learning and the Teacher Education Curriculum." (Section I)

Whitelaw, John B. "Targets for Teacher Preparation." (Section I)

VI. INTEGRATION AND COORDINATION OF THEORY AND PRACTICE

Allen, Arthur T. and Dorothy I. Seaberg. "Teachers-in-the-Becoming." *The Elementary School Journal*, 64:332-339, March, 1964.

Reports the conclusions of two action-research studies designed to help twenty-six preservice elementary school teachers implement educational theory in classroom practice. The problem was approached from the point of view of the teachers' role-functions. The first sequence, a semester in length, consisted of an orientation period followed by two complementary phases of student teaching, the purposes of which were to provide opportunities for the student to recognize (1) the major functions performed by the classroom teacher and (2) guiding principles of teaching and learning within which he might develop his professional behavior. The second sequence, also a semester in length, encompassed half-day teaching sessions with a parallel, integrated course in psychology and methodology, the purposes of which were to help the student (1) further conceptualize the role of the teacher and (2) use principles from developmental psychology and the dynamics of learning in establishing his role-function behaviors in the classroom. As a result of these studies the investigators believe that the professional sequence should be viewed as a progression through a series of four developmental levels of planned experiences: (1) readiness, (2) exploratory teaching, (3) student teaching in depth, and (4) internship.

De Vault, M. Vere, Dan Anderson, Dorothy Swain, and Patricia Cantley. "Teacher Education and the Study of Teacher Classroom Behavior." *Theory Into Practice*, 3:21-25, February, 1964.

Reports a study of the effects of three different methods of teaching the basic educational psychology courses to juniors majoring in elementary education upon the prospective teachers' communication behavior and the self-concepts and classroom climate as perceived by the pupils taught by these students during the semester of student teaching and the year of full-time teaching. Semester courses in child psychology and the psychology of learning were each taught by (1) the "concept-centered" approach, (2) the "case-study" approach, and (3) "learner-centered" approach. Reports the study design in detail, together with the findings which include the following: that pupil reaction to the student teachers varied as much within each approach as between the three approaches; that a teacher's behavior in the classroom is related to his personality and system of values; that individual children respond differently to the communication behavior of their teachers. Suggests that clinical experiences in the teacher-education program need to be more specific, that evaluation and analysis of teacher behavior need to be a part of the initiatory experience, and the focus of the prospective teacher's attention must turn to the understanding of his own behavior and the impact of that behavior on the behavior of the learner.

Flanders, Ned A. "Intent, Action and Feedback: A Preparation for Teaching." *The Journal of Teacher Education,* 14:251-260, September, 1963.

Describes an observation technique which may be used to record verbal interaction in the classroom. Proposes that education courses prior to student teaching allow students to test and evaluate teaching behaviors as a means of translating understanding into action. During student teaching, the supervising teacher may provide feedback data. "In either case, the requirement is that the learner be able to compare his intentions with feedback information about his actions and analyze this information by using concepts which he found useful in his earlier courses in education."

Ryans, David G. "A Theory of Instruction with Special Reference to the Teacher: An Information System Approach." *The Journal of Experimental Education,* 32:191-215, Winter, 1963.

Presents an elaboration of the viewpoint and conceptual framework reported in Ryans' *Characteristics of Teachers.* Teacher behavior, pupil behavior, and the instructional process are considered within an information-system context. "Such a model not only makes explicit the information forwarding nature of instruction, but also provides a general methodology for analyzing and improving teaching-learning." Equations are developed as statements of hypothesized relations among certain variables of teacher characteristics and of pupil behavior. Some implications of the information-system model for the instructional process are discussed under the following topics: (1) the teacher as an information-processing system; (2) the pupil as an information-processing system; (3) instruction as interaction of teacher, pupil, and situation; (4) the situation as a mediator in the expression of teacher behavior; (5) the integration of instruction and the role of the teacher. Included in the article are eight illustrative diagrams.

Withall, John. "Mental Health-Teacher Education Research Project." *The Journal of Teacher Education.* 14:318-325, September, 1963.

Reports the progress of a five-year project to assess the effect of three differing instructional approaches upon three comparable groups of student teachers during their upperclass preparation for teaching and their first year of full-time teaching. The three instructional approaches studied were (1) a concept-oriented approach, (2) a case study-oriented approach, (3) a student-centered approach. Each student was exposed to one approach only. The subjects in this study were 144 elementary education students and certain professors of education at the University of Wisconsin. An analysis of classroom communication patterns using fourteen observational categories was made throughout the year in the classrooms of the professors. The purpose of this analysis was to determine if professors using differing instructional approaches would have differing communication patterns, and if there were any concomitant yet dissimilar patterns of behavior in the differently taught groups of students. Significant differences in communication behavior as defined by the fourteen observational categories were noted. There were no significant differences in subject matter mastery between the groups of students as measured by pre- and post-administration of objective-type tests. A major implication of this study is that "the socio-psychological forces generated in classrooms have greater impact on the learners academically and psychologically than any pedagogical devices or strategems."

See also:

Kniseley, V. V. "Inevitable Obsolescence?" (Section I)

Tanruther, Edgar M. "What Does It Mean To Be a Supervising Teacher?" (Section VII)

Wilhelms, Fred T. "Exploring New Paths in Teacher Education." (Section V)

VII. THE SUPERVISING TEACHER AND OTHERS GUIDING LABORATORY EXPERIENCES

Anderson, Robert and Paul A. Saimond. "Student Teaching: Gateway to the Profession." *New York State Education,* 51:8-10, June, 1964.

Defines the roles of the supervising teacher and the college supervisor, and stresses the importance of carefully planned experiences in the induction of the student into the professional laboratory experience. Proposes a preplanned day's visit to the school by the student teacher and the college supervisor approximately a month prior to the student teaching experience. Stresses the importance of the cooperating teacher working closely with the student in all areas of his experience—in and out of the classroom; of setting time aside each day to discuss informally the planning for classes and an evaluation of the instruction in those classes already taught. Refers to the significant role of the college supervisor in bringing to the school his experiences as a classroom teacher and as an educator with knowledgeable information concerning curriculum trends and promising practices.

Bossone, Richard M. "Training the Supervising Teacher." *The Teachers College Journal,* 35:178-179, March, 1964.

Suggests that supervising teachers need to understand the responsibilities of this role to determine if they wish to assume its demands, and also to alleviate some of the anxiety and insecurity that this role may arouse. Suggests the student teacher's difficulties often stem from the supervising teacher's anxiety and insecurity. Proposes that the supervising teacher is one who understands the student teacher-supervising teacher relationship, who creates an emotional climate in which the student teacher feels accepted and wanted, who views his role as a leader assisting others who are learning to teach. First, the supervising teacher seeks to know and understand the student teacher—exchange of resumes, educational philosophy. Second, through planning effectively and cooperatively with the student teacher, the student is helped to grow, to justify his own approach, to correct his mistakes, and to engage in independent creative thinking. Third, the supervising teacher evaluates the student teacher as a growing teacher. A cumulative record should be kept of the student teacher's work to serve as a basis for conferences. The comments should be valid and significant, and deal with specific incidents that relate to the areas of evaluation.

Sharpe, Donald M. "An Analysis of Teaching Load for College Supervisors of Secondary Student Teaching—Indiana State College." *The Teachers College Journal*, 35:42-45, November, 1963.

Recognizes the importance of professional staff supervision of student teachers and of an equitable assignment of teaching load to provide adequate time for quality supervision. Proposes two formulae for computing staff load for general and for department supervisors of secondary school student teachers. Each formula includes as many of the significant elements of the responsibilities of each supervisor as is possible in numerical terms. Data are provided to suggest the implementation of the formulae. The data suggest that the average supervisory load for both types of supervisors approximates two students per assigned teaching hour at Indiana State College.

Tanruther, Edgar M. "What Does It Mean To Be a Supervising Teacher?" *The Teachers College Journal*, 35:167-171, March, 1964.

Notes the relation of the student teaching period to the total program of teacher education and to the responsibilities of those concerned with this program. Stresses that the supervising teacher is in a strategic position to help student teachers integrate theory with practice as he recognizes that (1) each student is different from every other, (2) communication occurs as the student feels accepted, (3) cooperative teaching helps students learn to plan, execute, and evaluate, (4) accomplishment thrives as ability is challenged, (5) self-evaluation is a continuous responsibility of the teacher. The supervising teacher also stimulates the student teacher's growth toward teaching competency as he (1) provides direct experience in the classroom, (2) helps the student formulate a working philosophy of education, (3) introduces the student to cooperative work with professional colleagues, (4) provides direct experience in in-service professional organizations, (5) ensures the student time and energy to develop as a person and a citizen.

Taylor, Gem K. and Jack W. Fields. "Problems Confronting the College Coordinator in an Off-Campus Student Teaching Program." *Peabody Journal of Education*, 41:308-311, March, 1964.

Suggests that the college coordinator is responsible for developing a program which will (1) develop better understanding between the coordinator and supervising teacher, (2) provide a balance of activities in the student teacher's assignment, (3) utilize criteria for the selection of supervising teachers, and (4) stimulate student teachers to participate in the analysis of their experiences. Proposes that such a program may be fostered by using seminars as means of communication between the coordinator and supervising teachers and as opportunities for integration of experience by student teachers.

Wilson, Charles F. "Student Teachers Adversely Affected by Super Supervision." *Clearing House*, 38:105-107, October, 1963.

Presents a hypothetical situation in which a neophyte teacher makes "mistakes" in a class observed by his supervisor. Suggests that "too many of our present sponsor teachers are inhibiting, consciously or unconsciously, the normal growth of the young teachers entrusted to them." Points out that too much pre-planning in student teaching may be thwarting the student teacher in becoming creative, and "that traditional subject-matter specialists, acting as sponsor teachers, represent one of the most powerful forces operating to impede the dissemination of new content, methodology, and organizational patterns in the public schools."

VIII. GUIDING THE STUDENT THROUGH CONFERENCES

Telfer, Harold E. and William R. Sleeper. "The Student Teacher Conference: A Must!" *Peabody Journal of Education*, 41:169-172, November, 1963.

Stresses the need for constant communication between supervising and student teachers via conferences—both formal and informal. Suggests that the formal conference follow a planned agenda with the supervising teacher taking a leadership role, but with the student teacher participating in helping to plan the topics to be discussed and bringing pre-listed questions to be discussed. The formal conference is viewed as an organized session to help the student teacher understand the whys and wherefores of his current pupil-teacher experiences, but both teachers must work at this goal cooperatively for best results. The informal conference occurs any time and anywhere as it is needed to clarify circumstances at hand. This type of conference, as valid as it is, seldom leads to permanent records, so it should not replace the formal conference. The elements of mutual concern are better provided for by constant use of student teacher conferences which tend to lessen the chances for misunderstandings between the two people working so closely together. Time must be found to hold these mutual sharing conferences.

See also:

Bossone, Richard M. "Training the Supervising Teacher." (Section VII)

IX. GUIDING THE STUDENT IN PLANNING

See:

Bossone, Richard M. "Training the Supervising Teacher." (Section VII)

Wilson, Charles F. "Student Teachers Adversely Affected by Super Supervision." (Section VII)

X. OBSERVATION AND PARTICIPATION

Bushnell, Donald D. "Computer-based Simulation: A New Technology for Education." *AV Communication Review*, 11:45-55, March-April, 1963.

Describes the Classroom Simulator used to prepare student teachers at the Center for Teaching Research at the Oregon State System of Higher

Education. This simulator presents short film clips of classroom situations to which the student teacher reacts. The supervisor of student teaching analyzes the student's response and then selects a sequence of film which may "(1) show the classroom disintegrating as the result of lack of forceful direction on the part of the student teacher, (2) have the students going to their seats but erupting in new problems if the teacher is not vigilant, or (3) result in an effectively managed classroom if the teacher trainee performs adequately." The realism of this feedback depends upon the variety of films which may be used to match the student's response. States that the purpose in simulating may be "(1) to effect the analysis of an ongoing situation, (2) to aid in the development and evaluation of a new design, system, or organization." For analytic purposes, performance data obtained in simulated situations may be used to determine the efficiency and effectiveness with which human endeavors realize specified objectives. Immediate feedback helps the learner associate cues and responses, and results in a situation sufficiently complex to be characteristic of the situations encountered in real system operations.

Medley, Donald M. "Experiences with the OScAR Technique." *The Journal of Teacher Education,* 14:267-273, September, 1963.

Describes two studies in which the OScAR technique was used as a means of recording classroom interaction. Conclusions reached as a result of these experiences are summarized in relation to (1) behaviors relating to teacher effectiveness, (2) supervisory ratings as criteria of teaching effectiveness, (3) the effect of the student teaching experience, (4) factors affecting the outcomes of student teaching, (5) the feasibility of measuring classroom behavior objectively. Though no substantive findings have been gained as yet through use of the OScAR technique, the technique does seem to be of value to supervisors as they observe teaching behavior, to students as they observe classroom interaction, and to educators as they seek to evaluate the total effect of a teacher education program as evidenced in the actions of student teachers.

Schueler, Herbert, Milton J. Gold, and Nathan Stoller. "Television: Research and Demonstration Tool." *Theory Into Practice,* 3:9-12, February, 1964.

Reports a study carried out at Hunter College (New York City) exploring different approaches to observation of student teachers. Describes the three experimental conditions investigated: (1) student teachers observed in the usual way, with the supervisor coming to the classroom and observing in person; (2) student teachers observed via closed-circuit television, and a kinescope film made of the lesson; (3) both procedures used in combination. Results of all three approaches confirmed the value of student teaching in a teacher-education program. "While there were some small differences in favor of student teachers who saw kinescopes of themselves, statistical analysis revealed no significant superiority. Supervisors of the student teachers generally favored combining kinescope recordings and personal visits to the classroom." The most significant difference was the effect on the student teacher of a particular classroom, a particular set of environmental factors, and a particular teacher. Also reports a second study to determine the impact of direct observation, live closed-circuit television, and kinescope films on students' ability to learn from different techniques of observation in a methods course. An essay examination confirmed the hypothesis that observation via kinescope was superior to direct observation.

Stoller, Nathan, Gerald S. Lesser, and Philip I. Freedman. "A Comparison of Methods of Observation in Preservice Teacher Training." *AV Communication Review,* 12:177-197, Summer, 1964.

Reports a study to determine if different classroom observational methods result in different degrees of learning in preservice teacher education students. The hypothesis tested was that kinescope recordings "provide a more effective medium of observation than closed-circuit television and that TV observation is in turn more effective than the traditional procedure of direct observation in the elementary school classroom." Subjects in the study were 288 students in twelve sections of the Hunter College course, "Elementary Education, Its Organization, Curriculum, and Methods." Each of two college instructors taught six sections of the course each of two semesters. Almost all students were in their Junior year and had completed their education courses except student teaching. The hypothesis was tested by an analysis of variance design containing three observational conditions, two instructors, and two categories of scholastic ability among the students. Measures of two dependent variables were used to test observational effectiveness. One measure, an objective multiple-choice test of information about methods of teaching, failed to confirm the hypothesis. The other measure, an essay examination assessing ability to evaluate critically an observed classroom lesson, confirmed the hypothesis. Implications of the data for classroom observations in teacher education programs are discussed.

Woodward, John C. "The Use of Television in Teacher Education." *The Journal of Teacher Education,* 15:56-60, March, 1964.

Reports a five-semester experiment conducted at San Jose (California) State College in which three groups of prospective elementary school teachers observed public school classroom activities via television (25 per cent) and through in-person observation (varying from 25 to 75 per cent) for the fifty-hours normally spent in observation as a part of the course entitled "Elementary Curriculum and Observation." These students were compared with two control groups who made only the established number of in-person observations. The groups were compared at the completion of the course and following student teaching, using locally established rating scales. The findings indicate that observation via controlled television, plus decreased amounts of in-person observation, is as effective as the total established amount of in-person observation.

See also:

De Vault, M. Vere, Dan Anderson, Dorothy Swain, and Patricia Cantley. "Teacher Education and the Study of Teacher Classroom Behavior." (Section VI)

Devor, John W. "The Experience of Student Teaching." (Section II)

Flanders, Ned A. "Intent, Action and Feedback: A Preparation for Teaching." (Section VI)

XI. INTERNSHIP AND APPRENTICE TEACHING

Haberman, Martin. "Intern Concept in Teacher Education." *Wisconsin Journal of Education,* 96:12-14, January, 1964.

Suggests teacher preparation, in the future, will be by completing undergraduate requirements in a field of study other than education and then adding a year of professional preparation on the graduate level. Defines an intern as a person who: (1) has already received a B.A. degree in a field other than education; (2) begins his teacher preparation in a program of graduate study which will lead to an advanced degree; (3) receives some remuneration for the work with children or youth which is part of his preparation; (4) teaches under the close supervision of a master teacher in some form of team teaching; (5) bears full responsibility for at least a portion of the direct instruction of children. Basic beliefs which undergird the Intern Teaching Program of the School of Education of the University of Wisconsin-Milwaukee are: (1) as a group, graduate students are more likely than undergraduates to have the attributes associated with effective teachers; (2) the most important aspect of a teacher's preparation actually begins at the point of becoming an inservice teacher—it is not completed upon graduation from an undergraduate program; (3) the experience which an intern can gain on the job in a real situation is the most valuable professional laboratory experience which can be offered; (4) artificial barriers between college and inservice education can be lowered; (5) education is facilitated where it can be related to the learner's life experiences.

Shaplin, Judson T. and Arthur G. Powell. "A Comparison of Internship Programs." *The Journal of Teacher Education,* 15:175-183, June, 1964.

Traces the historical development in American education of the teaching internship defined as "an advanced level of student teaching in which the intern teaches a major portion or all of the day, is a college graduate, is paid by the school district, and is supervised by college personnel." Identifies as two significant contemporary patterns the internship as part of a five-year program of preparation and the master's degree program in the fifth year, commonly called the master of arts in teaching. Examples of these programs are discussed. Reports there is no evidence in the literature that the decision to choose one or another variation of these two basic patterns resulted from any particular theoretical commitment. Some of the problems of creating and continuing an internship program are delineated.

See also:
Whitelaw, John B. "Targets for Teacher Preparation." (Section I)

XII. RECORDS AND EVALUATION OF GROWTH THROUGH LABORATORY EXPERIENCES

Aden, Robert C. "Patterns for Social Studies Student Teachers at North Texas State University." *Peabody Journal of Education,* 41:95-98, September, 1963.

Reports a two-year experimental program for student teachers of the social studies with special reference to pre-student teaching patterns established in a selected battery of standardized tests. The purpose of the investigation was to find out if the students who receive a final grade of "A" in student teaching could have been identified in advance of their laboratory experience by a pattern of scores established upon the results of administered standardized tests. Likewise, the investigation was designed to see if the pattern would be significantly different for the "C" students taking the same tests. The 86 students involved were divided into two teams with one doctoral candidate and one faculty member teaching them. The student teaching grades were determined by a university faculty member, a doctoral candidate, and a secondary school supervising teacher. Of the 86 students, 26 received A's and 6 C's. Five different tests were used to establish the following summary: (1) a definite pattern emerged for the "A," the total, and the "C" group; (2) as a whole a greater percentage of knowledge of world history is retained than of American history, and more history is retained than of problems of democracy; (3) the group as a whole is low in home satisfaction, with the "A" group lower than the "C" group; (4) the "C" group is above the "A" group in emotional stability; (5) the "B" group ranked higher on personal relations and lower in confidence; (6) the "A" group is more sociable than the "C" group.

Gage, N. L. "A Method for 'Improving' Teacher Behavior." *The Journal of Teacher Education,* 14:261-266, September, 1963.

Tests the theory of equilibrium which suggests that teachers, holding positive attitudes toward their pupils, will change their behaviors to approximate pupils' descriptions of the behavior of their "best imaginable" teacher. The teachers in this study who received feedback on pupil perceptions of their actual and ideal teachers changed their teaching behaviors more than those teachers from whom feedback was withheld.

Isaacson, Robert L., Wilbert J. McKeachie, and John E. Milholland. "Correlation of Teacher Personality Variables and Student Ratings." *Journal of Educational Psychology,* 54:110-117, April, 1963.

Describes a use of the Norman Peer Group Nomination Scale to predict specific personality traits correlated with students' ratings of effective college teaching. This technique secures peer group nominations on twenty bipolar items which are combined to yield scores on five personality factors. These factors are labeled (1) surgency, (2) agreeableness, (3) dependability, (4) emotional stability, (5) culture. The Peer Group Nomination Scale, a descriptive adjective inventory, and the Institute for Personality Factor Questionnaire were administered to thirty-three teaching fellows in the introductory psychology course at the University of Michigan. The majority of these fellows were advanced graduate students in psychology. Personality scores obtained by the fellows were related to effectiveness of teaching ratings made by their students. "The teacher personality variable most consistently correlated with good ratings by students was the peer group evaluation of the teaching fellows' general cultural attainment."

Lantz, Donald L. "Changes in Student Teachers' Concepts of Self and Others." *The Journal of Teacher Education,* 15:200-203, June, 1964.

Reports the changes in concepts of self, other elementary school teachers, and the ideal teacher on the part of thirty-six women elementary majors during their student teaching experience. Students "learned to perceive themselves as being more trustful and accepting in their interpersonal behavior" and described themselves with less intensity of depreciation. Their self-concepts changed significantly less on the Cooperative-Overconventional Scale. Other elementary school teachers were conceived as significantly less blunt and aggressive and more trustful and accepting. The ideal teacher was perceived as more trusting and accepting and employing the interpersonal behavior described by the Cooperative-Overconventional or Responsible-Overgenerous Scales, but not to the high frequency indicated prior to student teaching.

Ort, Vergil K. "A Study of Some Techniques Used for Predicting the Success of Teachers." *The Journal of Teacher Education,* 15:67-71, March, 1964.

Reports a study to explore a possible correlation of attitudes, personality, predicted success, and college achievement with success as a student teacher and as a first-year teacher. Data on 443 seniors in education were gathered from the Minnesota Multiphasic Personality Inventory (MMPI), the Minnesota Teacher Attitude Inventory (MTAI), the cumulative grade point average, the Trigg Reading Test, the American Council on Education Psychological Examination, and an interview with the director of student teaching. Following the student teaching experience and the first year of teaching, the student was evaluated by his supervisors. The data from this study indicate that (1) academic achievement does not seem to predict teaching success, (2) the MMPI and the MTAI do not seem to predict teaching success, (3) the best predictions of the future success of a student teacher may be made by the student's supervising teacher and college supervisor, (4) no correlation exists between the student's reading test score, his ACE score, and his success as a student teacher.

Swineford, Edwin J. "An Analysis of Teaching-Improvement Suggestions to Student Teachers." *The Journal of Experimental Education,* 32:-299-303, Spring, 1964.

Reports a study of teacher-improvement suggestions offered sixty junior high school student teachers. These suggestions were derived from over 500 class period observations. The observations were made by one person and recorded in free-style writing. Students were rated on five categories: (1) teaching techniques and procedures, (2) maintaining classroom discipline and control, (3) developing a classroom teaching personality, (4) planning, (5) demonstrating a sound academic background. An analysis was made of the ratings of each category and of the interrelationships among categories. A summary of persistent problem areas and some implications for further study are noted.

Veldman, Donald J. and Robert F. Peck. "Student Teacher Characteristics from the Pupils' Viewpoint." *Journal of Educational Psychology,* 54:-346-355, December, 1963.

Reports the use of a 38-item pupil observation survey to evaluate the teaching effectiveness of 554 junior and senior high school student teachers. Five factors were extracted and analyzed: (1) Friendly, cheerful, admired; (2) poised, knowledgeable; (3) interesting, preferred; (4) strict control; (5) democratic procedure. Women students were rated higher than men students on factors (1) and (5). Correlations of the pupil ratings with the California Psychological Inventory and the Self-Report Inventory administered to the student teachers were low, but significant. There was no relation between supervisor evaluations and pupil evaluations of factor (3). This factor seems to reflect the pupils' conception of an effective teacher. The supervisors' ratings are quite clearly a function of the student teachers' friendliness (1), poise (2), and control of the classroom (4). It is interesting to note the lack of correspondence of factor (5) and the effectiveness ratings.

Wilk, Roger E. and William H. Edson. "Predictions and Performance: An Experimental Study of Student Teachers." *The Journal of Teacher Education,* 14:308-317, September, 1963.

Reports a study designed to find the predictive value of admission data, including interview data, for future classroom teaching performance. The major hypothesis tested is that many student teachers enter teaching due to a need to dominate other people (n Dom) or a need to be a socially integrative factor in other people's growth and development (n Intg); these needs may be identified by the classroom behaviors which Flanders has specified as "direct influence" (n Dom) or "indirect influence" (n Intg). "Thus the verbal behavior of student teachers became the criterion for testing the validity of counselor judgments and other admission data." The subjects of this study were thirty-six women student teachers in elementary education at the University of Minnesota. The observational methods used were the OScAR III and the Flanders Minnesota System of Interaction Analysis. The six predictor variables analyzed were the high school record, the Miller Analogies Test, the Minnesota Teacher Aptitude Inventory, the sophomore grade-point average, the Bowers Inventory, and counselor judgments of n Dom and n Intg based on interview and test scores. The data of the study suggest that n Intg can be predicted from the sophomore grade-point average and from the MTAI. Admissions data were not related to classroom observations of n Dom.

See also:

Bossone, Richard M. "Training the Supervising Teacher." (Section VII)

Henry, Marvin A. "The Relationship of Difficulties of Student Teachers to Selected Aspects of the Professional Sequence of Education." (Section V)

Medley, Donald M. "Experiences with the OScAR Technique." (Section X)

XIII. LABORATORY FACILITIES

Danley, Verna. "Specs for a Child Development Laboratory." *American School and University,* 36:32-33, April, 1964.

Presents a rationale for child development laboratories and discusses some of their uses in programs of early childhood education. Outlines the equipment and design of a one-room laboratory for twelve three-and four-year-old children. This laboratory includes an observation booth, six major interest centers, a kitchen, bathroom, storage facilities, and teacher's office. The laboratory is designed to provide within a modest college budget observation of the basic phases of child care and development.

XIV. PLACEMENT AND FOLLOW-UP OF GRADUATES

Dropkin, Stanley and Marvin Taylor. "Perceived Problems of Beginning Teachers and Related Factors." *The Journal of Teacher Education,* 14:384-390, December, 1963.

Analyzes the responses of seventy-eight beginning elementary school teachers to a questionnaire designed to assess the degree of difficulty to the beginning teacher of certain areas of teaching activity. These difficulties are also analyzed in terms of urban-suburban teaching differences and their relationship to student cognitive ability as measured by the American Council on Education Psychological Examination and grade-point average in professional courses. Problems in descending order of difficulty were found to be (1) discipline, (2) relations with parents, (3) methods of teaching, (4) evaluation, (5) planning, (6) materials and resources, (7) classroom routines. Items 1, 5, 6, and 7 showed a significant negative relationship to grade-point average. Item 6 had a significant negative relationship to American Council on Education Psychological scores.

See also:

Ort, Vergil K. "A Study of Some Techniques Used for Predicting the Success of Teachers." (Section XII)

XV. DESCRIPTIVE PRACTICES

See:

Kneller, George. "Panorama of Teacher Education." (Section I)

Wilhelms, Fred T. "Exploring New Paths in Teacher Education." (Section V)